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# Public Health Reports

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## PREVALENCE OF COMMUNICABLE DISEASES IN THE UNITED STATES

**February 26–March 25, 1939**

The accompanying table summarizes the prevalence of eight important communicable diseases, based on weekly telegraphic reports from State health departments. The reports from each State are published in the Public Health Reports under the section "Prevalence of disease." The table gives the number of cases of these diseases for the 4-week period ending March 25, the number reported for the corresponding period in 1938, and the median number for the years 1934–38.

### DISEASES ABOVE MEDIAN PREVALENCE

*Influenza.*—The number of cases of influenza reported for the 4 weeks ended March 25 was 63,297, as compared with 8,724 cases for the corresponding period in 1938 and approximately 41,000 and 43,500 cases in 1937 and 1936, respectively. The number of cases for the current period was more than seven times the number reported in 1938 and more than three times the 1934–38 average incidence for the period. Each section of the country reported a very significant increase in the number of cases over 1938 and in all regions except the Pacific the incidence was considerably above the average for recent years. The largest excesses were reported from the South Atlantic, North Central, and Mountain regions.

The epidemiclike wave of this disease appeared rather late this season. The peak incidence in preceding years has usually been reached during February, and the number of cases has dropped rapidly during the month of March. In January and February the incidence compared very favorably with the average of preceding years, but during the period under consideration it was the highest in the 11 years for which these data are available. The highest weekly incidence during the recent rise was reported during the week ending March 11, with a total of approximately 18,000 cases; the number of cases has declined considerably since then and a still further decline may be expected.[1]

[1] See also p. 611.—Ed.

*Typhoid fever.*—The incidence of typhoid fever (515 cases) was about 20 percent above the 1934–38 average incidence for this period. The excess was largely due to a comparatively high incidence in the West South Central and South Atlantic regions. Louisiana, in the West South Central region, reported 142 cases, as compared with 98 cases and 28 cases reported during the corresponding period in 1938 and 1937, respectively, while Virginia (20 cases) and West Virginia (23 cases) seemed mostly responsible for the excess in the South Atlantic region. In the Middle Atlantic region the number of cases was slightly above the seasonal expectancy, but in all other regions the incidence was relatively low.

*Number of reported cases of 8 communicable diseases in the United States during the 4-week period Feb. 26–Mar. 25, 1939, the number for the corresponding period in 1938, and the median number of cases reported for the corresponding period 1934–38* [1]

| Division | Current period | 1938 | 5-year median | Current period | 1938 | 5-year median | Current period | 1938 | 5-year median | Current period | 1938 | 5-year median |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Diphtheria | | | Influenza [2] | | | Measles [3] | | | Meningococcus meningitis | | |
| United States [1] | 1,724 | 2,104 | 2,139 | 63,297 | 8,724 | 19,456 | 62,298 | 170,929 | 129,505 | 201 | 329 | 646 |
| New England | 32 | 69 | 64 | 274 | 53 | 155 | 6,313 | 2,787 | 7,453 | 7 | 12 | 18 |
| Middle Atlantic | 333 | 375 | 375 | 638 | 148 | 191 | 6,611 | 41,168 | 20,187 | 44 | 57 | 93 |
| East North Central | 339 | 443 | 398 | 10,317 | 334 | 1,030 | 5,135 | 78,386 | 18,285 | 21 | 40 | 92 |
| West North Central | 115 | 149 | 277 | 7,357 | 645 | 1,219 | 6,092 | 6,924 | 6,924 | 11 | 43 | 43 |
| South Atlantic | 283 | 386 | 370 | 15,743 | 1,691 | 4,002 | 11,873 | 22,057 | 10,332 | 40 | 58 | 121 |
| East South Central | 115 | 157 | 162 | 11,404 | 1,037 | 3,491 | 1,680 | 9,864 | 5,870 | 27 | 73 | 73 |
| West South Central | 276 | 286 | 286 | 12,109 | 3,877 | 6,765 | 2,768 | 3,257 | 2,342 | 19 | 27 | 55 |
| Mountain | 81 | 98 | 76 | 4,314 | 473 | 709 | 3,501 | 4,426 | 4,426 | 17 | 3 | 19 |
| Pacific | 150 | 141 | 141 | 1,141 | 466 | 1,310 | 18,325 | 2,060 | 4,348 | 15 | 16 | 16 |
| | Poliomyelitis | | | Scarlet fever | | | Smallpox | | | Typhoid and paratyphoid fever | | |
| United States [1] | 51 | 81 | 78 | 21,157 | 25,538 | 30,157 | 1,320 | 2,056 | 990 | 515 | 452 | 423 |
| New England | 0 | 2 | 2 | 1,406 | 2,224 | 1,891 | 0 | 0 | 0 | 11 | 10 | 17 |
| Middle Atlantic | 3 | 10 | 8 | 5,405 | 6,947 | 7,673 | 0 | 0 | 0 | 68 | 48 | 57 |
| East North Central | 11 | 13 | 12 | 7,796 | 8,020 | 10,718 | 409 | 471 | 162 | 32 | 67 | 67 |
| West North Central | 2 | 4 | 8 | 2,308 | 3,711 | 3,711 | 290 | 629 | 597 | 22 | 21 | 24 |
| South Atlantic | 11 | 15 | 9 | 870 | 1,175 | 1,195 | 8 | 22 | 12 | 98 | 51 | 62 |
| East South Central | 7 | 11 | 9 | 634 | 648 | 474 | 30 | 115 | 8 | 31 | 31 | 39 |
| West South Central | 6 | 11 | 8 | 587 | 693 | 617 | 312 | 205 | 81 | 221 | 171 | 93 |
| Mountain | 5 | 4 | 3 | 627 | 826 | 837 | 78 | 164 | 100 | 16 | 27 | 19 |
| Pacific | 6 | 11 | 16 | 1,524 | 1,294 | 1,325 | 193 | 450 | 107 | 16 | 26 | 26 |

[1] 48 States. Nevada is excluded and the District of Columbia is counted as a State in these reports.
[2] 44 States and New York City.
[3] 46 States. Mississippi and Georgia are not included.

*Smallpox.*—The incidence of smallpox remained relatively high. While the number of cases (1,320) was only about 65 percent of the number reported during this period in 1938, it represented an increase of more than 30 percent over the preceding 5-year average incidence for the corresponding period. Of the total number of cases, Indiana reported 198; Oklahoma, 190; California, 122; Iowa, 113; and Texas,

111 cases; more than one-half of the cases occurred in those 5 States. In the West North Central region, where the disease has been unusually prevalent for some time, the number of cases reported for the current period was less than 50 percent of the 1934–38 average incidence, and in the Mountain region the number of cases was the lowest for this period in recent years.

### DISEASES BELOW MEDIAN PREVALENCE

*Diphtheria.*—The incidence of diphtheria remained comparatively low. The number of cases (1,724) reported for the 4 weeks ended March 25 was about 20 percent below the average seasonal incidence. The West South Central, Mountain, and Pacific regions reported about the average number of cases for the season, but in all other regions the incidence was considerably below the 1934–38 median figure for this period.

*Measles.*—The number of cases (62,298) of measles reported for the current period was only about 35 percent of the number reported for the corresponding period in 1938 and less than 50 percent of the average number of cases (129,505) for the years 1934–38. The highest incidence was reported from the South Atlantic and Pacific regions. However, in the South Atlantic region the incidence was only slightly above normal, but in the Pacific region the number of cases was more than four times the average number of cases reported from that region. In the West South Central region the number of cases was also somewhat higher than might be expected, but in the remaining regions the incidence was relatively low. An increase of measles is expected at this season of the year and the peak is not usually reached until April or May.

*Poliomyelitis.*—The poliomyelitis incidence continued relatively low, the number of cases (51) being about 65 percent of the number reported in 1938, and also of the 1934–38 average figure for the corresponding period. The situation was very favorable throughout the country, the incidence in all sections, except the South Atlantic and Mountain, being the lowest in recent years. For the country as a whole the incidence was the lowest since 1933, when 50 cases were reported for the period corresponding to the current one.

*Meningococcus meningitis.*—For the 4 weeks ended March 25 there were 201 cases of meningococcus meningitis reported, as compared with 329, 772, and 1,172 for the corresponding period in 1938, 1937, and 1936, respectively. The number of cases was the lowest recorded for this period in the 11 years for which these data are available. In the Mountain and Pacific regions the incidence stood at about the average seasonal level, but all other regions reported very definite decreases from the 5-year average incidence for this period.

*Scarlet fever.*—The scarlet fever incidence was also the lowest in recent years. More than one-half of the total cases reported (21,157) occurred in the Middle Atlantic and East North Central regions, but even in those regions the incidence was considerably below the average seasonal incidence. The East South Central and Pacific regions reported more cases than normally occur in those areas, but in all other regions the incidence was relatively low, the decreases from the 1934–38 median ranging from 5 percent in the West South Central group to almost 40 percent in the West North Central States.

### MORTALITY, ALL CAUSES

The average mortality rate for large cities during the 4 weeks ended March 25, based on data received from the Bureau of the Census, was 13.0 per 1,000 population (annual basis). The rate was slightly higher than the rate (12.2) for the corresponding period in 1938, but it was the same as the average rate for the years 1934–38.

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## THE ANTIGENIC AND SYNERGISTIC ACTION OF A TOXIC SERUM EXTRACT OF HEMOLYTIC STREPTOCOCCI [1]

By MARK P. SCHULTZ, *Surgeon*, and EDYTHE J. ROSE, *Associate Bacteriologist, United States Public Health Service*

When the blood sera of various species of animals are shaken with hemolytic streptococci a thermolabile, toxic serum extract is obtained which may cause hemolysis *in vitro* at high dilutions and which may be lethal for mice upon the intravenous injection of small doses. Such toxic extracts were described by Weld in 1934 and 1935(*1*), and were the subject of study by Schluter and Schmidt in 1936 (*2*) and by Ronald Hare 1937 (*3*). The purpose of the experiments to be described here was a study of the antigenic properties of such extracts; the authors mentioned reported no investigations on this phase of the subject. The results are considered worthy of presentation for two reasons: First, the toxic serum extracts of hemolytic streptococci may induce a high degree of cutaneous hypersensitivity to the extracts themselves in the absence of demonstrable humoral antibodies; and, second, such extracts are apparently synergically effective in inducing cutaneous hypersensitivity to the blood serum of the species of animal treated.

### METHODS

*Animals.*—The animals used were 30 white, male rabbits of a stock bred at this institute, weighing between 2,500 and 3,000 grams. The hair was clipped from the right side of each animal 3 days before the experiment was begun, and this denuded area was utilized in certain

[1] From the Division of Infectious Diseases, National Institute of Health, Washington, D. C.

groups for intracutaneous treatment injections. Three days before the conclusion of the experiment the left sides were also clipped, and these fresh areas were used for test injections.

*Preparation of toxic serum extract.*—From each rabbit 25 cc. of blood was taken from a marginal ear vein 2 weeks before treatment was begun. The blood was collected in paraffin-lined tubes, and permitted to clot at room temperature, and the resulting serum, pooled, was inactivated by exposure to a temperature of 56° C. for 40 minutes. This lot served as a source of serum for all toxic extracts and of untreated serum.

Group A hemolytic streptococcus strain C203, derived from a patient with scarlet fever, was used and a single blood broth stock culture of the organism was the source of inoculum for all subcultures. The strain was passed through mice several times in succession just prior to its use in this experiment, but it remained comparatively avirulent for members of this species; the lethal dose was 0.01 cc. A single lot of broth prepared in the manner described by Hare (1937) was used throughout and cultures were incubated at 37° C. for 20 hours.

The toxic serum extract was prepared by shaking culture sediment and portions of serum, with glass beads, in a machine for 1 hour at room temperature. Regardless of the total quantities in any instance, the relationship of 1 cc. of serum for the sediment from 50 cc. of culture was uniformly preserved, while each preparation of bacterial cell suspension was extracted with fresh portions of serum five times. We have found, as have others, no diminution in the potency of toxic serum extracts obtained after this number of extractions. Following each period of shaking, the serum-bacteria suspension was centrifuged and the supernatant filtered through Berkefeld "N" candles while the collecting flask was immersed in a freezing solution. The serum extract was thus frozen as soon as possible after removal from contact with bacterial cells. All portions of extract were kept frozen until the desired quantity had been collected. They were then melted, pooled, distributed in separate 22 cc. quantities (sufficient for each day's treatments), and immediately refrozen. Each quantity was finally melted just before use.

The portion of serum not treated with bacteria but used for control injections was likewise filtered, frozen, melted, distributed in separate appropriate quantities, and refrozen. Both the toxic serum extract and the lot of serum preserved were found to be sterile when fresh and again at the conclusion of the experiment.

*Cultures for animal inoculation.*—Culture for intracutaneous inoculation was diluted with physiological saline in such a manner that, regardless of the dose, the quantity injected was 0.1 cc. Vaccine for preliminary intravenous injection was prepared by concentrating culture suspensions to one-tenth their original volume in physiological

saline, adding formalin to 0.2 percent final concentration, and keeping the formalized suspensions at refrigerator temperature for 48 hours. The vaccine contained no living organisms.

*Serological titrations.*—The hemolytic titer of the toxic serum extract was determined as follows: One-half cc. of physiological saline was placed in each but the first of a series of tubes. Immediately after melting, 0.3 cc. of toxic serum extract was diluted with 0.9 cc. of physiological saline; 0.5 cc. of this dilution was placed in both the first and second tubes. After mixing the contents of the second tube, 0.5 cc. was transferred to the third. This process was repeated through the series of tubes. Fresh rabbit erythrocytes were washed four times with physiological saline, and the volume of cells present was noted after 15 minutes of centrifugation at 1,500 r. p. m. One-half cc. of a 5 percent suspension of this sediment in physiological saline was then added to each tube and the contents of each were well mixed. The degree of hemolysis at each dilution was observed after the tubes had remained for 2 hours in a water bath at 37° C.

Agglutinin titrations were performed in the usual manner and the tubes were read after remaining 1 hour in a water bath at 56° C.

*Cutaneous reactions.*—The maximum and minimum diameters and the approximate height of each cutaneous lesion resulting from each intradermal injection were measured in millimeters with small calipers after 4, 24, and 48 hours; unless otherwise stated, reference in the following text is to 24-hour readings. From the average diameter and estimated height the approximate volume of each lesion in cubic millimeters was calculated by the use of an equation which has been found suitable for this purpose (Derick and Swift (*4*)).

## RESULTS

*Properties of the toxic serum extract.*—The pooled serum used was clear and free from the effects of hemolysis; and no change was apparent to inspection following extraction. The toxic serum extract was tested in several ways before the animal experiment was begun and again 25 days later after it had been completed, with identical results at each testing. In tests of hemolytic potency *in vitro*, the maximum dilution causing complete hemolysis was 1:16, while no hemolysis occurred at greater dilutions than 1:1024. Doses of 0.5 cc. injected intravenously into mice caused them to appear ill for about 2 hours and to excrete red urine but were not lethal. Equivalent doses of the original lot of rabbit serum not used for extraction were without apparent effect. Intradermal injections into rabbits of 0.1 cc. of toxic rabbit serum extract resulted in the appearance of pink, highly edematous papules which attained their maximum volume in from 4 to 24 hours and thereafter regressed. The lesions measured from 25 to 45 mm. in diameter and were elevated 1.5 to 3.0 mm. above the

surrounding cutaneous surface. Local edema persisted for several days, but the skin surface usually remained unbroken and healing was apparently complete. Occasionally the superficial layers of the skin at the centers of the papules became necrotic, and pearly white areas, similar to those induced by comparable injections of staphylococcus toxin, appeared.

Toxic extracts kept in the frozen state or dried by the lyophile process preserved their potency for several months. Repeated freezing and thawing of specimens otherwise undisturbed resulted in a concentration of toxic potency in the lower layers of the extract.

## EXPERIMENT

Pooled serum from a group of 30 rabbits was used in preparing a lot of toxic extract and a portion of the same pooled serum was preserved as a stock of normal rabbit serum. The rabbits from which the serum was obtained were apportioned into six groups of five each, the members of which received the following treatment for a period of 2 weeks:

Group A: Untreated.

Group B: Received five 0.2 cc. intracutaneous injections of normal rabbit serum daily (a total of 12.0 cc. each).

Group C: Injected intravenously with vaccine the equivalent of 1.0 cc. of culture on the first day, and the dose was increased by this amount each succeeding day for 5 days. During the second week, living culture in equivalent doses was substituted for vaccine. (Total culture and vaccine equivalent, 42 cc. each.)

Group D: Inoculated intracutaneously with five 0.1 cc. doses of living culture on the first day. Thereafter, five doses of 0.01 cc. of living culture were given daily in the same manner. (Total culture, 1.1 cc. each.)

Group E: Received 3.0 cc. of toxic extract intravenously daily. (Total, 36 cc. each.)

Group F: Injected intracutaneously with five 0.2 cc. doses of toxic serum extract daily. (Total, 12.0 cc. each.)

All the rabbits appeared healthy and all gained weight except three members of group C which lost less than 100 grams each during the 2 weeks. The character of local responses to the intracutaneous injection of normal rabbit serum in group B remained constant during the course of the experiment except that, latterly, lesions were of increased size. At first they were but slightly larger at 4 hours than immediately after injection and usually decreased in size within 24 hours. Later, their course of evolution was similar, but they were larger both at 4 and 24 hours. The intravenous injection of culture in group C caused no symptoms. The intracutaneous inoculation of culture in group D induced the formation of red papules, which

at first attained their maximum size in about 24 hours, but, as hypersensitivity developed, they were larger in some instances at 48 hours. At the beginning of the experiment the intracutaneous injection of 0.01 cc of culture caused the formation of papules in members of this group approximating in size those developing in members of groups A and B when they were first tested with this dose of culture at the conclusion of the experiment. After 2 weeks, as evidence of the development of bacterial hypersensitivity in members of group D,

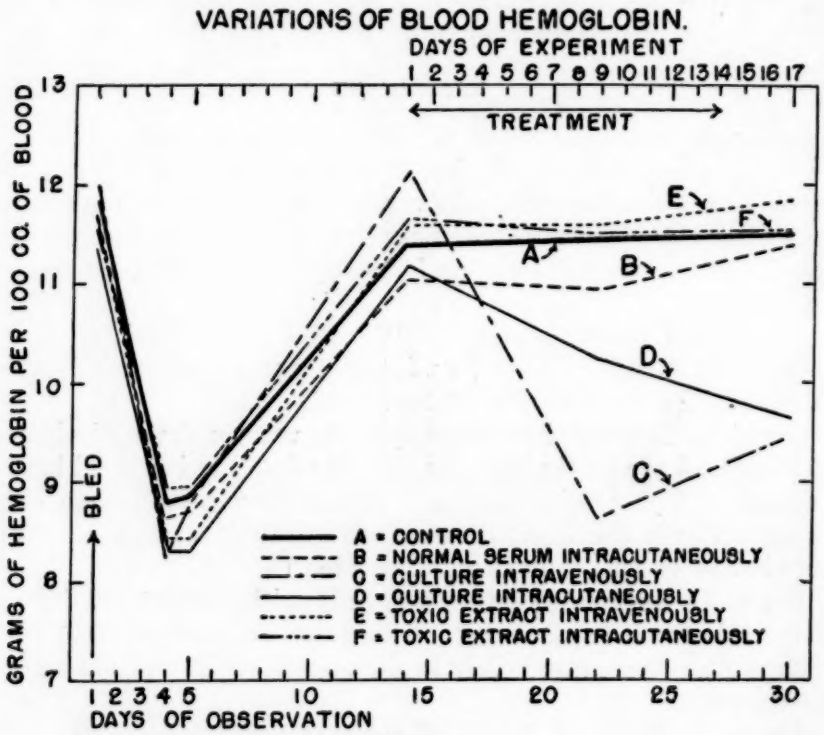


FIGURE 1.

the intracutaneous injection of equivalent doses of culture provoked lesions about twice as large. The degree of alteration in reactivity induced in this group to the bacterial strain employed is, therefore, represented in figure 2 by a comparison of the responses in group A with those in group D at the time of final testing.

The intravenous injection of toxic serum extract gave rise to no apparent symptoms in members of group E. The character of local lesions following the intracutaneous injection of toxic extract into normal rabbits has been described. Following repeated injections of this type into members of group F the local lesions became much larger but were otherwise unaltered in character.

The animals were subjected to rather copious bleeding 2 weeks before the start of the experiment. The low blood hemoglobin levels

(Newcomer method) 10 and 11 days before the start of the experiment, as indicated in figure 1, were therefore to be anticipated. During the course of the experiment it was apparent that treatment with normal rabbit serum intracutaneously (group B) or with toxic extract intravenously (group E) or intracutaneously (group F) exerted no depressing effect upon the blood hemoglobin levels. The continued slight increase in blood hemoglobin concentrations in these groups was probably due to further recovery from the bleedings. In mem-

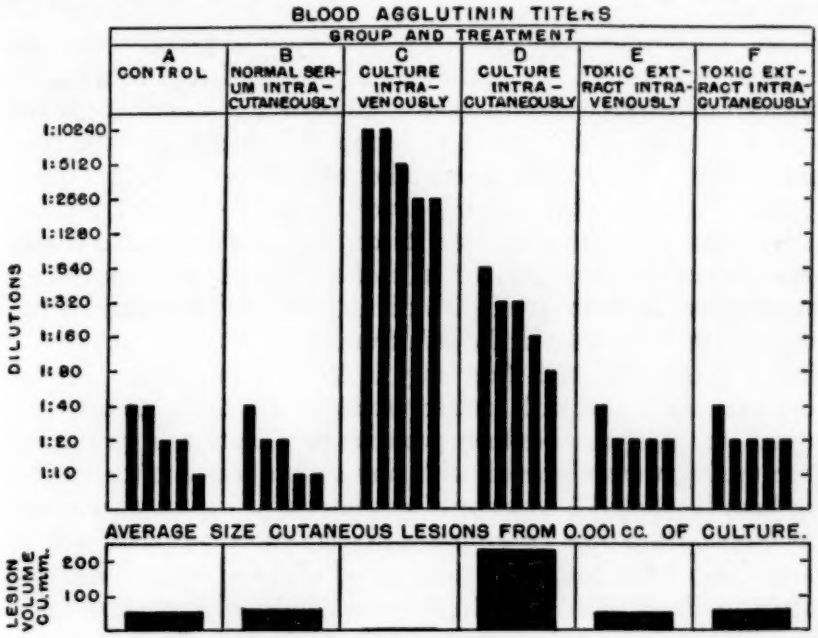


FIGURE 2.

bers of the groups receiving culture intracutaneously (group D) or intravenously (group C), on the other hand, there was a distinct drop in the blood hemoglobin levels during treatment.

On the eighteenth day of the experiment all the animals were bled for specimens of blood serum and each received the following test doses intracutaneously: (1) 0.01 cc of bacterial culture, (2) 0.1 cc of toxic serum extract, and (3) 0.1 cc of pooled normal rabbit serum. The resulting cutaneous reactions were measured at 4, 24, and 48 hours.

In group D the lesions at the sites of bacterial test inoculations were typically hyperergic in character—large, red, and edematous with, occasionally, necrotic centers. The reactions in group C, on the other hand, were of the hypoergic, immune type; they were, relatively, quite small and rapidly became indurated. Lesions in members of the other groups, of intermediate character, were all similar. The average volumes of the papules observed at 24 hours in the several

groups is indicated in figure 2. There was variation within each group, but all the lesions observed in members of group D were larger and all in group C smaller than those of other groups. These results indicate that inoculations of bacterial culture, with appropriate choice of dosage and route, induced states of bacterial hypersensitivity and immunity, respectively, in groups D and C demonstrable by alterations in cutaneous reactivity to the organism employed. Analogous treatments with toxic extract in groups E and F, on the other hand, failed to alter the animals' cutaneous reactivity to the homologous culture, indicating that the extract lacked the capacity to induce states of hypersensitivity and immunity to the living bacterial cells demonstrable by cutaneous tests. Similarly, intracutaneous injections of normal rabbit serum in group B induced no alteration in cutaneous reactivity to the bacterial culture.

Serum from members of the several groups obtained before the start of the experiment and at its conclusion were tested for antibodies in several ways. The results of agglutinin titrations using the homologous organism are indicated in figure 2. An increased titer was demonstrable only in the sera from members of groups C and D after treatment; in high titer only in the former group. Precipitin tests were performed with each serum at 37° C., using the toxic serum extract as antigen. Neither positive ring tests nor precipitation after mixing were observed with any serum tested after the tubes had been incubated 2 hours or after subsequent exposure to refrigerator temperature for 12 hours. All sera were negative for antistreptolysin when tested by the method of Todd as modified by Coburn and Pauli (*5*). The streptolysin employed was prepared with strain WPRL and was satisfactory for use in testing human sera (Schultz and Rose (*6*)).

Each serum tested was mixed with equal parts of toxic serum extract and the hemolytic potency of the mixtures for rabbit erythrocytes was tested *in vitro*. The observed reduction in hemolytic titer of these mixtures was comparable in degree to that resulting from equivalent dilutions of the toxic extract with normal rabbit serum. The toxic serum extract was mixed in equal parts with the several serum samples tested and injected intracutaneously into normal rabbits. The resulting skin lesions did not differ in character or size from those induced by comparable dilutions of the extract with normal rabbit serum. These tests, without exception, failed to demonstrate the presence of humoral antibodies in rabbits treated either intravenously or intracutaneously with toxic serum extract.

The treatment given the various groups of rabbits, however, in certain instances altered their cutaneous reactivity to the toxic serum extract and to normal rabbit serum. The relative volumes at 24 hours of the skin lesions induced by test doses of the toxic extract at

the conclusion of the experiment are shown in figure 3. When compared with members of the control group (A), the cutaneous lesions of groups C and E, treated respectively with culture and extract intravenously, were found to be smaller. The lesions resulting from test

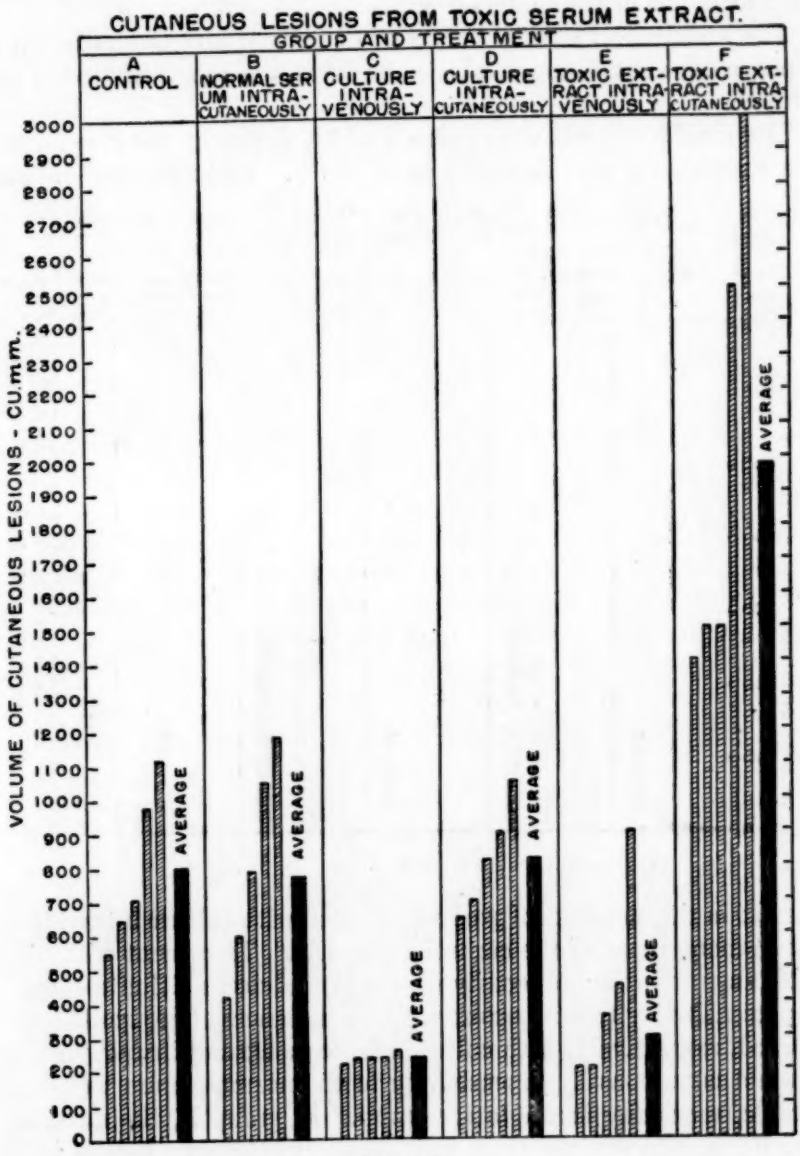


FIGURE 3.

doses of the toxic extract in members of groups B and D, treated respectively with normal rabbit serum and culture intracutaneously, differed but slightly from those in the control group (A). In members of group F, treated with toxic extract intracutaneously, lesions pro-

voked by test doses of the toxic extract were very large. It was evident that whereas the intracutaneous injections of extract rendered the animals hypersensitive to this substance, the intravenous treatment with either culture or toxic extract rendered them less sensitive than members of the control group.

The injection of normal serum or of culture intradermally, on the other hand, did not appreciably alter cutaneous reactivity to the toxic extract.

The results of tests with normal rabbit serum at the conclusion of the experiment are indicated in figure 4. Lesions were definitely

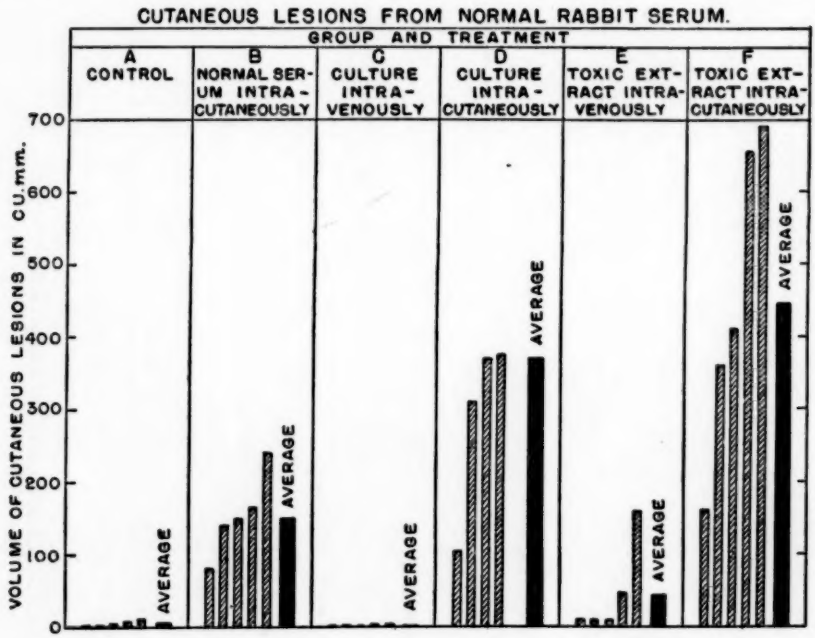


FIGURE 4.

smaller in the members of group C, treated with culture intravenously, than among those of the control group (A). Treatment with normal rabbit serum intracutaneously (group B) induced a definite cutaneous hypersensitivity to such serum while in members of groups D [2] and F, treated, respectively, with culture and toxic extract intracutaneously, distinct cutaneous hypersensitivity to the normal serum was demonstrable, especially in the latter group. In group E, the members of which received toxic extract intravenously, the skin lesions induced by normal serum were larger in two of five instances than those in any of the controls.

[2] In figure 4, through error in drawing, the lesion volumes of only four of the five members of group D are represented; the volume in the fifth instance was 700 cu. mm. The average volume represented is, therefore, correct.

The evolution of cutaneous lesions resulting from test injections of normal serum and of toxic extract varied in the different groups and may be demonstrated by comparing results after 4 hours' observation with those at 24 hours (fig. 5). Following the intracutaneous test injection of toxic extract, lesions were larger at 24 hours than at 4 in members of all groups except C and E, which received, respectively, culture and toxic extract intravenously. In these two groups, the members of which were distinctly hypoergic to the toxic extract, the lesions regressed during the period of observation. The injection of normal rabbit serum, on the other hand, provoked lesions which were

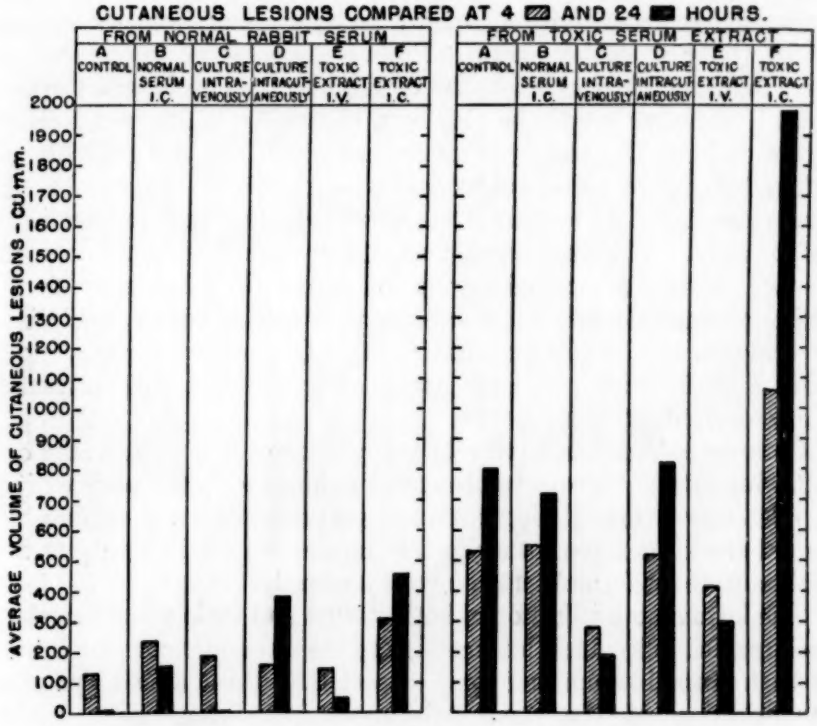


FIGURE 5.

smaller at 24 hours than at 4 hours in members of all groups except D and F, which were treated, respectively, with culture and toxic extract intracutaneously. The responses to injections of normal rabbit serum were definitely hyperergic in these animals and the lesions increased in size during the period of observation.

In this experiment, hyperergic responses to the injection of toxic extract were observed only following a course of intracutaneous injections of toxic extract, while such a reaction to normal rabbit serum, although most pronounced as a result of such treatment, also developed in animals which had received bacterial culture or normal serum

intracutaneously. Hypoergic, immune reactions to the toxic extract, on the other hand, appeared in individuals which had been injected intravenously with culture or extract. Such reactions to normal serum, however, were detected only in those immunized with culture intravenously.

## DISCUSSION

The fact that hypersensitivity to normal rabbit serum developed following its repeated intracutaneous injection into rabbits may be due to alteration having taken place in the character of the component substances due to filtration, freezing, and ageing. The induction of bacterial hypersensitivity affected a much more pronounced increase in reactivity to rabbit serum. Probably similar nonspecific alterations in immunological reactivity incident to the development of bacterial hypersensitivity have also been observed with respect to horse serum (Schultz (*7*)) and eye lens extract (Swift and Schultz (*8*, 2)).

The highest degree of cutaneous hypersensitivity to normal rabbit serum developed in animals treated with toxic serum extract intracutaneously. The toxic component of the extract probably acts with respect to the associated serum in a manner analogous to the action of staphylotoxin when injected with substances relatively inert as antigens (Swift and Schultz (*8*, 1)). Under such circumstances, toxin may function immunologically as a synergist with respect to the associated antigen.

Cutaneous hypersensitivity to toxic serum was demonstrable only following intracutaneous treatment of animals with the toxic extract. A relatively overwhelming native toxicity, however, may have obscured the influence of other factors in animals preliminarily treated with culture or normal serum intracutaneously.

The intravenous injection of both culture and toxic extract rendered such treated individuals less reactive to the intracutaneous application of both normal serum and toxic extract than those animals prepared by injection of the same substances intracutaneously. Lesions resulting from the intracutaneous injection of normal serum or toxic extract were smaller in animals treated intravenously than in controls in all instances except one, the response to a cutaneous test with normal serum in rabbits which had received toxic extract intravenously.

These experiments demonstrate the influence of dosage and route of administration in determining the character of immunological response. The results described with hemolytic streptococcus toxic extract are probably unique in that there was not evidence of the development of humoral antibodies coincident with the appearance of either hyperergic or hypoergic, "immune" cutaneous response.

## CONCLUSIONS

1. Following the intravenous or intracutaneous injection into rabbits of a toxic rabbit serum extract of hemolytic streptococci, humoral antibodies were not demonstrable and the cutaneous reactivity of the animals to test doses of the homologous culture was not altered.

2. The cutaneous reactivity of rabbits to normal, pooled rabbit serum was enhanced by repeated intracutaneous injections of such serum, by the induction of bacterial hypersensitivity and by the repeated intracutaneous injection of toxic rabbit serum extract of hemolytic streptococci. The latter treatment induced the highest degree of hypersensitivity to normal, pooled rabbit serum.

3. The cutaneous reactivitiy of rabbits to toxic rabbit serum extract of hemolytic streptococci was depressed by preliminary intravenous immunization with the homologous strain and by repeated intravenous injections of such toxic extract. On the other hand, a high degree of cutaneous hypersensitivity to this toxic extract developed following preliminary intracutaneous injections of the substance.

4. Alterations in cutaneous reactivity induced by treatment with toxic serum extract were apparently independent of humoral antibody development.

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# A TWO-YEAR RECORD OF ADULT MOSQUITO TRAPPING IN DADE COUNTY, FLORIDA

By CHARLES T. CARNAHAN, *Associate Public Health Engineer, United States Public Health Service*

This report covers an almost continuous nightly trapping of adult mosquitoes carried out in the vicinity of Miami, Fla., from September 10, 1936, to October 13, 1938. The object of these collections was to sample, if possible, the normal mosquito population present in this area as a basis for detecting any new species that might be introduced from an outside source.

As an airport of entry from South America and the West Indies, Miami occupies a significant position with reference to the importation of insect vectors of tropical diseases, and it is important that no new obnoxious mosquito species be allowed to establish themselves in this area should they be accidentally imported into the United States. The area about Miami is semitropical, and indications are that *Anopheles albimanus* could propagate readily in this area. There is also some possibility that *Anopheles gambiae* might be able to survive in this region should it be introduced. Both of these species are extremely important malaria vectors and might, if introduced, create a serious malaria problem in an area where little malaria is now present. Although neither as spectacular nor as fatal as yellow fever, malaria can become the cause of much illness and enormous economic loss, and is much more difficult to control once it becomes established in an area.

Six mechanical light traps of the type known as the New Jersey model 50 were used in making these collections. These traps consist essentially of a vertical sheet-metal cylinder about 12 inches in diameter by 14 inches in length. Raised above the top of the cylinder, thereby providing an annular entrance space, is a conical-shaped cover to shed water. An electric light placed in the top of the cylinder illuminates the annular entrance, while a suction fan within the cylinder draws in any insects attracted by the light. Below the fan a cyanide jar is placed, into which the insects are blown by the fan. The limiting feature in the selection of trap locations was the availability of electric current for their operation. Permission was obtained to locate the traps at the following places: United States Quarantine Station, Fisher Island, Miami Beach; Surfside Police Headquarters, Surfside; Hialeah City Hall, Hialeah; Dade County Hospital and Home, near Kendal; Chapman Field, United States Department of Agriculture Experiment Station; and United States Coast Guard Air Station, Dinner Key, Miami. These locations enclose an area between 50 and 60 square miles known locally as the "Greater Miami" area of Dade County. The area is about 12 miles in length along the ocean front

and 4½ to 5 miles wide. All traps were sufficiently close to salt marshes to reflect strikingly the presence of salt marsh varieties of mosquitoes.

The traps were operated nightly by means of an electrical timing device which automatically started the fans at 6 p. m. and stopped them at 6 a. m. each day. The fans were kept oiled and in good operating condition by the attendant, who brought in the collections. A complete circuit of the traps for collection purposes entailed a 60-mile drive. The traps were overhauled from time to time as necessitated by repair or replacement of the fans. The entire set was completely rebuilt in April 1938. The traps held up remarkably well, considering that they were in nightly operation, in all weather for a period of over 2 years without much trouble.

Collections were made daily until the spring of 1937, when they were changed to thrice weekly, and later semiweekly and weekly collections were made. From the material collected, the mosquitoes were separated and identified. This identification involved a considerable amount of work when the collections were very heavy, and much of the credit for this work goes to Junior Entomologist E. V. Welch, who did the major portion of it.

The captured mosquitoes were classified into 23 species. No striking differences were observed in the species of mosquitoes collected by the individual traps that were not explained by the character of the topography immediately adjacent to the particular trap. The table presented shows the composite monthly totals for all traps and the totals of all mosquitoes captured during the entire period of operations. A total of 214,285 specimens was taken, of which number 37.6 percent were the salt marsh species *Aëdes taeniorhynchus* and *Aëdes sollicitans*, with fewer *sollicitans;* 5.9 percent were anophelines, *Anopheles atropos*, *Anopheles crucians*, *Anopheles quadrimaculatus*, and *Anopheles walkeri*, *crucians* being by far the most prevalent anopheline trapped; 41.5 percent were the so-called "nonbiters," made up of *Culex mochlostyrax* or *melanoconion*, sp. grouped together, *Deinocerites cancer*, the crab hole breeder, and *Uranotaenia lowii* and *sapphirinus;* and the remaining 15.0 percent were made up of all other species and consisted mainly of *Psorophora columbiae* and *Culex culex*, sp.

From the records of temperature and rainfall in the Miami area, it appears that, in general, temperature exerts more influence upon the total number of mosquitoes trapped than does rainfall, although it is believed that the relatively fewer mosquitoes collected in the summer of 1938 as compared with 1937 was due, in a measure at least, to an unusually dry period which existed from November 1937 to April 1938.

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*Monthly summary of mosquito collections*

[TOTAL ALL TRAPS]

| Species | 1936 | | | | 1937 | | | | | | | | | | | | 1938 | | | | | | | | | | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | September | October | November | December | January | February | March | April | May | June | July | August | September | October | November | December | January | February | March | April | May | June | July | August | September | October | |
| *Aëdes sollicitans* | 732 | 395 | 41 | 1 | | 3 | 8 | 88 | 19 | 44 | 52 | 67 | 28 | 62 | | | 3 | | | | 2 | 5 | 8 | | | | 1,558 |
| *A. taeniorhynchus* | 346 | 335 | 27 | 10 | 2 | 11 | 220 | 868 | 305 | 4,125 | 10,176 | 16,815 | 13,821 | 5,711 | 109 | 14 | 2 | 6 | 1 | | 125 | 4,789 | 15,093 | 1,591 | 4,827 | 795 | 80,122 |
| *Anopheles atropos* | 10 | | 2 | | | | 1 | | | | | 4 | 30 | | | | | | | | | 1 | | | | | 48 |
| *An. crucians* | 1,742 | 1,392 | 329 | 150 | 133 | 439 | 385 | 245 | 121 | 31 | 20 | 269 | 536 | 3,315 | 658 | 395 | 412 | 167 | 151 | 5 | 9 | 12 | 259 | 15 | 23 | 7 | 11,220 |
| *An. quadrimaculatus* | 111 | 52 | 33 | 19 | 26 | 8 | 2 | 3 | 1 | 2 | 10 | 51 | 67 | 74 | 43 | 37 | 16 | 4 | 4 | | 1 | | | | | 2 | 566 |
| *An. walkeri* | 166 | 324 | 112 | 84 | 54 | 80 | 16 | 10 | | | 1 | | 1 | 51 | 36 | 19 | 11 | 6 | 2 | | | | | | | | 973 |
| *Culex culex*, sp. | 33 | 124 | 146 | 38 | 47 | 65 | 244 | 338 | 652 | 597 | 359 | 2,922 | 3,073 | 2,585 | 391 | 135 | 62 | 20 | 42 | 42 | 91 | 298 | 504 | 209 | 118 | 47 | 13,182 |
| *C. mochlo./melan.*, sp. | 92 | 147 | 349 | 116 | 64 | 241 | 536 | 382 | 763 | 442 | 112 | 1,635 | 2,401 | 28,322 | 1,017 | 857 | 140 | 20 | 56 | 12 | 34 | 22 | 306 | 104 | 142 | 17 | 38,333 |
| *Deinocerites cancer* | 350 | 707 | 390 | 485 | 571 | 369 | 1,074 | 1 | 2 | 36 | 124 | 82 | 85 | 84 | 3 | 176 | 172 | 207 | 471 | 416 | 833 | 1,233 | 1,793 | 1,109 | 226 | 1 | 11,000 |
| *Psorophora columbiae* | 120 | 30 | 11 | 1 | | 1 | 12 | 350 | 63 | 38 | 90 | 9,754 | 363 | 4,875 | 16 | | | | | 1 | | 19 | 1,081 | 40 | 1 | 191 | 17,063 |
| *Uranotaenia lowii* | 375 | 3,617 | 913 | 170 | 94 | 277 | 491 | 269 | 1,448 | 244 | 359 | 4,173 | 10,092 | 9,869 | 3,553 | 475 | 32 | 3 | 22 | | | 54 | 205 | 226 | 279 | 269 | 39,545 |
| *U. sapphirinus* | 5 | | 45 | 11 | 2 | 31 | 17 | 17 | 56 | 111 | 285 | 581 | 153 | 125 | 79 | 64 | 8 | 2 | 4 | 4 | 7 | | 21 | 10 | 97 | 304 | |
| *A. atlanticus* | 1 | | | | | | | | | | | 12 | | 392 | | | | | | | | | | | | | 405 |
| *A. aegypti* | 3 | | 1 | | 1 | | | 3 | 1 | 3 | 1 | 1 | 4 | 1 | | | | | | | | 1 | | | | | 20 |
| *Mansonia perturbans* | 8 | 1 | | | | | | | | | | | | | | | | | | | | | | | | | 9 |
| *M. titillans* | | | 2 | | 1 | | | | 1 | 4 | 5 | 54 | 11 | | | | | | | | | | | | | | 78 |
| *A. infirmatus* | | | 1 | | | 1 | | 4 | | | | 14 | 11 | 6 | | | | | | | | 1 | 1 | | | | 39 |
| *C. inornatus* | | | 1 | | | | | | | | | | | | 1 | | | | | | | | | | | | 2 |
| *Ps. ciliata* | | | | | | | 1 | | | | | | | 2 | | | | | | | | | | | | | 3 |
| *Ps. howardii* | | | | | | | | | | | | | | 25 | | | | | | | | | | | | | 25 |
| *Wyeomyia*, sp. | | | | | | | | | | 20 | 35 | | 8 | | | 3 | 2 | | 1 | | 3 | 4 | 10 | 3 | 3 | | 92 |
| *Mansonia*, sp. | | | | | | | | | | | | | 1 | | | | | | | | | | | | | | 1 |
| *A. triseriatus* | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | 1 |
| Total | 4,094 | 7,124 | 2,403 | 1,085 | 995 | 1,526 | 3,007 | 2,575 | 3,432 | 5,095 | 11,635 | 36,434 | 30,685 | 55,499 | 5,906 | 2,175 | 860 | 435 | 754 | 480 | 1,105 | 6,443 | 19,281 | 3,307 | 5,716 | 1,634 | 214,285 |

Salt marsh mosquitoes are more prevalent in the warmer weather from April to October, during which time they constitute the bulk of the collections. Anophelines, on the other hand, approach their greatest prevalence from September to April. The nonbiting class of mosquitoes, while numerically more prevalent in summer, make up a larger percentage of the total collections during the fall, winter, and early spring. Other species, mainly *Psorophora columbiae* and *Culex culex*, sp., are present at all times of the year but increase greatly during the summer.

Adult mosquitoes are present throughout the entire year in the Miami area; and while for short periods the recorded winter temperature may go as low as 40° F., it is doubtful whether at any time of the year there is complete absence of progressive development of the aquatic stages of any of the species collected. No new species of mosquitoes or species not already known in the area were collected during the entire time of the study.

Acknowledgment is made to those whose cooperation enabled us to maintain traps on their premises during the period of the study. The work of J. M. Detzel in collecting the specimens and in keeping the traps in operation is also acknowledged.

## INFLUENZA PREVALENCE

For the week ended April 8, 1939, the number of cases of influenza reported by the State health authorities dropped to 9,740, as compared with 13,590 cases for the preceding week, a decrease of 3,850 cases, which is the largest weekly decline since the peak week of March 11. All geographic areas, with the exception of the New England States, shared in this reduction. Based on current reports, the New England and the Middle Atlantic States have had the least amount of influenza during this year's mild epidemic.

The accompanying tables present the numbers of cases of influenza reported weekly by States from the first of the year to and including the week of April 8, and influenza and pneumonia data for a large group of cities, with an aggregate population of approximately 33,000,000, to and including the week ended April 1. Five-year median and averages are given for comparison.

*Cases of influenza reported by weeks, Jan. 1–Apr. 8, 1939*

| Division and State | Week ended— Jan. 7 | Jan. 14 | Jan. 21 | Jan. 28 | Feb. 4 | Feb. 11 | Feb. 18 | Feb. 25 | Mar. 4 | Mar. 11 | Mar. 18 | Mar. 25 | Apr. 1 | Apr. 8 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **NEW ENG.** | | | | | | | | | | | | | | |
| Maine | 1 | 3 | 2 | 10 | 4 | 1 | 8 | 25 | 46 | 103 | 30 | 54 | 22 | 73 |
| New Hampshire | | | | 1 | | | | | | | 40 | | | |
| Vermont | | | | | | | | | | | | | | |
| Massachusetts | | | | | | | | | | | | | | |
| Rhode Island | | | | | | | | | | 1 | | | | |
| Connecticut | 10 | 6 | 13 | 4 | 7 | 26 | 22 | 29 | 30 | 141 | 20 | 133 | 7 | 10 |
| **MID. ATL.** | | | | | | | | | | | | | | |
| New York [1] | 44 | 57 | 37 | 155 | 159 | 183 | 137 | 101 | 91 | 57 | 38 | 60 | 41 | 22 |
| New Jersey | 14 | 24 | 12 | 19 | 56 | 61 | 99 | 44 | 24 | 19 | 13 | 12 | 5 | 3 |
| Pennsylvania | | | | | | | | | | | | | | |
| **E. N. CENT.** | | | | | | | | | | | | | | |
| Ohio | | | | | | | | | | | | | | |
| Indiana | 12 | 11 | 22 | 4 | 21 | 21 | 363 | 1,085 | 607 | 35 | 210 | 155 | 84 | 69 |
| Illinois | 18 | 12 | 60 | 30 | 36 | 227 | 955 | 1,478 | 1,241 | 838 | 541 | 326 | 73 | 63 |
| Michigan | | | 1 | 2 | | 1 | 39 | 255 | 429 | 674 | 220 | 208 | 243 | 20 |
| Wisconsin | 62 | 65 | 52 | 47 | 68 | 65 | 56 | 346 | 584 | 1,516 | 1,484 | 969 | 544 | 533 |
| **W. N. CENT.** | | | | | | | | | | | | | | |
| Minnesota | | 2 | 3 | 2 | | 1 | 3 | 24 | 12 | 40 | 22 | 34 | 14 | 1 |
| Iowa | | 4 | 10 | 2 | 1 | 8 | 27 | 291 | 1,083 | 695 | 643 | 299 | 156 | 202 |
| Missouri | 70 | 59 | 24 | 33 | 24 | 42 | 137 | | 644 | 678 | 452 | 144 | 27 | 11 |
| N. Dakota | 34 | 11 | 12 | 6 | 27 | 15 | 14 | 64 | 364 | 741 | 254 | 414 | 149 | 124 |
| S. Dakota | 6 | | | 2 | 1 | 10 | 3 | 6 | 77 | 50 | 22 | 40 | 33 | 43 |
| Nebraska | | | | 1 | | | | | 2 | 1 | 22 | 7 | 2 | |
| Kansas | 16 | 9 | 9 | 6 | 6 | 3 | 9 | 77 | 116 | 226 | 205 | 70 | 66 | 32 |
| **S. ATL.** | | | | | | | | | | | | | | |
| Delaware | | | | | | | | | | | | 1 | | |
| Maryland | 4 | 5 | 12 | 10 | 61 | 103 | 182 | 209 | 124 | 53 | 79 | 19 | 67 | 12 |
| Dist. of Col | 2 | 2 | 6 | | 5 | 5 | 18 | 25 | 25 | 11 | 3 | 3 | 2 | 3 |
| Virginia | 454 | 420 | 282 | 617 | 1,100 | 553 | 1,338 | 1,604 | 1,509 | 1,991 | 2,443 | 1,766 | 930 | 759 |
| W. Virginia | 21 | 13 | 34 | 41 | 21 | 26 | 33 | 36 | 271 | 71 | 218 | 118 | 512 | 528 |
| N. Carolina | 3 | 7 | 28 | 9 | 9 | 18 | 71 | 230 | 97 | 386 | 172 | 105 | 37 | 34 |
| S. Carolina | 909 | 495 | 865 | 649 | 772 | 701 | 972 | 592 | 1,181 | 1,142 | 872 | 1,636 | 1,265 | 846 |
| Georgia | 133 | 136 | 143 | 110 | 131 | 118 | 139 | 110 | 140 | 420 | 286 | 565 | 1,056 | 880 |
| Florida | 1 | 1 | 2 | 5 | | 1 | 1 | | 9 | 3 | 5 | 19 | 25 | |
| **E. S. CENT.** | | | | | | | | | | | | | | |
| Kentucky | 56 | 65 | 37 | 27 | 198 | 54 | 478 | 405 | 1,348 | 1,792 | 560 | 412 | 259 | 243 |
| Tennessee | 36 | 64 | 87 | 109 | 58 | 75 | 63 | 83 | 146 | 469 | 420 | 516 | 424 | 440 |
| Alabama | 158 | 191 | 188 | 169 | 250 | 186 | 160 | 180 | 599 | 1,126 | 1,862 | 2,154 | 2,502 | 978 |
| Mississippi | | | | | | | | | | | | | | |
| **W. S. CENT.** | | | | | | | | | | | | | | |
| Arkansas | 181 | 203 | 145 | 139 | 159 | 87 | 113 | 182 | 1,473 | 1,532 | 577 | 1,031 | 697 | 400 |
| Louisiana | 7 | 36 | 12 | 8 | 10 | 20 | 11 | 9 | 30 | 82 | 27 | 64 | 11 | 19 |
| Oklahoma | 222 | 149 | 119 | 193 | 162 | 207 | 129 | 193 | 334 | 387 | 682 | 466 | 343 | 308 |
| Texas | 492 | 716 | 531 | 703 | 699 | 621 | 983 | 737 | 965 | 968 | 1,718 | 1,773 | 2,440 | 2,285 |
| **MOUNTAIN** | | | | | | | | | | | | | | |
| Montana | 5 | 26 | 33 | 50 | 25 | 42 | 35 | 200 | 126 | 125 | 145 | 406 | 198 | 55 |
| Idaho | 4 | 2 | 1 | 1 | 1 | | | 12 | 1 | 14 | 4 | | 76 | 15 |
| Wyoming | | | | | | | | | 1 | 8 | | 2 | 1 | |
| Colorado | 21 | 21 | 31 | 45 | 35 | 93 | 125 | 121 | 150 | 136 | 73 | 74 | 30 | 20 |
| New Mexico | 2 | 1 | 21 | 10 | 6 | 9 | 1 | 3 | 57 | 677 | 670 | 198 | 101 | 18 |
| Arizona | 138 | 117 | 132 | 81 | 68 | 114 | 82 | 94 | 144 | 191 | 476 | 307 | 391 | 327 |
| Utah | 7 | 1 | 2 | 9 | 20 | 24 | 16 | 44 | 53 | 119 | 86 | 71 | 95 | 102 |
| **PACIFIC** | | | | | | | | | | | | | | |
| Washington | | 4 | 1 | | | 1 | 3 | | 8 | 3 | | 20 | | |
| Oregon | 71 | 39 | 46 | 53 | 25 | 40 | 42 | 34 | 97 | 261 | 118 | 63 | 79 | 139 |
| California | 41 | 41 | 82 | 33 | 76 | 43 | 28 | 59 | 50 | 73 | 209 | 239 | 553 | 123 |
| Total | 3,255 | 3,018 | 3,097 | 3,395 | 4,310 | 3,802 | 6,895 | 8,987 | 14,288 | 18,135 | 15,921 | 14,953 | 13,590 | 9,740 |
| 5-year median | 2,423 | 2,805 | 3,144 | 3,256 | 3,323 | 4,577 | 8,591 | 7,018 | 5,727 | 7,030 | 3,744 | 2,955 | 2,090 | 2,176 |

[1] New York City only.

*Reports from a group of 90 cities in the United States, with an aggregate population of approximately 33,000,000*

| | Week ended— | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Jan. 7 | Jan. 14 | Jan. 21 | Jan. 28 | Feb. 4 | Feb. 11 | Feb. 18 | Feb. 25 | Mar. 4 | Mar. 11 | Mar. 18 | Mar. 25 | Apr. 1 |
| Influenza: | | | | | | | | | | | | | |
| Cases, current year | 208 | 260 | 312 | 311 | 411 | 688 | 1,413 | 1,339 | 1,285 | 1,124 | 1,165 | 817 | 1,021 |
| 5-year average | 899 | 1,145 | 1,320 | 1,299 | 1,270 | 1,122 | 989 | 839 | 736 | 629 | 530 | 409 | 343 |
| Deaths, current year | 74 | 61 | 71 | 57 | 71 | 73 | 104 | 159 | 200 | 181 | 161 | 139 | 100 |
| 5-year average | 132 | 150 | 160 | 159 | 157 | 150 | 144 | 139 | 128 | 119 | 112 | 103 | 94 |
| Pneumonia: | | | | | | | | | | | | | |
| Deaths, current year | 811 | 771 | 702 | 726 | 758 | 813 | 871 | 943 | 917 | 907 | 818 | 741 | 663 |
| 5-year average | 1,010 | 1,040 | 1,056 | 1,019 | 992 | 983 | 993 | 994 | 989 | 972 | 949 | 913 | 879 |

## SILICOSIS AND LEAD POISONING AMONG POTTERY WORKERS

In 1936 the Commissioner of Health of West Virginia requested the Public Health Service to make a study of the prevalence of silicosis in the pottery industry that would enable the State compensation commissioner to set rates for plants desiring coverage by the Workmen's Compensation Silicosis Fund. Accordingly, in September 1936, the Public Health Service, in collaboration with the Bureau of Industrial Hygiene of the West Virginia State Health Department, began engineering and medical field studies of nine factories engaged in the manufacture of tableware, sanitary ware, electrical porcelain, and wall and floor tiles. The report of these investigations has recently been published by the Public Health Service.[1]

Silicosis, a fibrotic lung disease caused by long-continued inhalation of siliceous dust, was the most important physical defect found on clinical and X-ray examination of the 1,627 men and 889 women employed in these 9 factories. The case histories of two potters who were X-rayed during life and whose lungs were subjected to postmortem examinations have been presented. A diagnosis of first-stage silicosis, which designates an early case of the disease that has not progressed far enough to handicap the worker, was made in 106 men and 17 women of the employees examined. In second-stage silicosis the X-ray and clinical findings are present in the degree that characterizes well-established cases of the disease. At this stage the affected person is usually not seriously handicapped in the performance of the duties of his occupation, but the frequency of complaints of dyspnea

[1] Public Health Bulletin No. 244, by R. H. Flinn, W. C. Dreessen, T. I. Edwards, E. C. Riley, J. J. Bloomfield, R. R. Sayers, J. F. Cadden, and S. C. Rothman, with the above title. The report contains a chapter by J. W. Miller, A. V. Cadden, and David Salkin entitled "Post-mortem findings in two cases of potters' silicosis," illustrated by X-ray photographs of gross specimens and prepared sections, and a chapter by J. W. Knutson entitled "Dental status of a group of potters." The description of manufacturing processes is illustrated by 20 photographs, and there are 23 medical histories, each accompanied by a chest radiogram. There is a glossary of trade names of occupations and operations, an annotated bibliography of 83 titles, and an analytical index. The bulletin contains 178 pages. It is available from the Superintendent of Documents, Government Printing Office, Washington, D. C., at 30 cents per copy.

and weakness create a strong presumption that he probably would be unable to do more strenuous types of physical work. In this group of workers, 55 men and 5 women were thus diagnosed. In third-stage silicosis the X-ray and clinical findings indicate an advanced stage of the disease. The working capacity of the individual is seriously limited by shortness of breath, and the physical signs are much more easily recognizable than in the earlier stages. There were six men whose condition warranted this diagnosis.

In occupations in which the dust concentration exceeded 4 million particles per cubic foot, the proportion of workers found to have silicosis increased with increasing dust concentrations and increasing length of employment. Nine of the 12 workers exposed for more than 30 years to more than 16 million particles per cubic foot, for instance, had silicosis. Approximately three-fourths of the workers employed more than 30 years in the clay shop were found to have silicosis, and about half of the slip house and kiln workers employed more than 30 years were found to have the disease. On the other hand, no cases of silicosis were found in workers whose only employment in the pottery industry had been in the decorating department or mold shop.

It appears that if the dust concentration in potteries could be brought below 4 million particles per cubic foot new cases of silicosis would not develop.

Twelve cases of active adult pulmonary tuberculosis were found. It was not practicable to conduct sputum examinations in the field, and so these diagnoses (based on X-ray findings and the presence of the classical clinical symptoms) are not as firmly established as should be desired, but it is interesting to note that 11 of the 12 tuberculous workers were employed in the clay shop, an incidence quite out of proportion to the number of persons employed in that shop.

It is gratifying to note that lead poisoning, formerly an important health hazard in this industry, is being controlled largely as a result of the widely practiced substitution of fritted glazes for glazes containing large amounts of readily soluble lead compounds. Only one case of lead poisoning was found, a dipper who worked in a factory where soluble lead compounds were added to the glaze. A few persons exposed to lead in their working environment showed signs of lead absorption (high urinary lead contents and elevated reticulocyte percentage), but the usual signs and symptoms of lead poisoning were not common.

## RECOMMENDATIONS

The most effective means of preventing the development of new cases of silicosis is to prevent the formation and dispersal of dust by installation and maintenance of dust-control equipment. The engineering control measures described in the bulletin are based on the following principles:

(1) The simplest and most satisfactory method of controlling dust is to suppress it at its point of origin, by enclosed operations, wet methods, exhaust ventilation, or by a combination of these methods, the choice depending on circumstances.

(2) To supplement the equipment that may be necessary to suppress or remove dust at its point of origin, measures to prevent waste clay from accumulating should be instituted and enforced. Under no circumstances should waste clay be allowed to dry and be dispersed as dust by tramping feet, rolling wheels, or the vibrations set up by machinery. Work places where wet clay accumulates should be regularly and frequently cleaned with a hose or other wet method; floors and benches where dry material accumulates should be cleaned with a vacuum cleaner.

(3) Respirators should be used only as an emergency measure pending the installation of adequate control equipment or for short and infrequent operations.

Plant physicians and physicians practicing in industrial communities have definite responsibilities:

(1) No person with an open case of pulmonary tuberculosis should be allowed to work where he can communicate his disease to his fellow-workers or in occupations where he himself will be adversely affected. Such persons should be advised to seek adequate medical treatment. Healed primary or childhood tuberculosis does not seem to contraindicate employment in a dusty trade.

(2) Pottery workers and workers in other dusty trades should be especially warned to avoid colds, grippe, influenza, and other respiratory diseases, as respiratory conditions seem to have more serious after-effects in silicotic persons than in nonsilicotic individuals. Patients should be advised to stay at home during the infective stages of these diseases, both for their own good and to avoid infecting their fellow workers.

(3) Glaze and frit makers, dippers, and other workers exposed to lead should be examined regularly by a physician to detect early signs of lead poisoning. This examination might well include a reticulocyte or basophilic aggregation count or an estimation of basophilic stippling. Prevention of lead poisoning depends both on effective control measures and on personal cleanliness on the part of the worker.

(4) Pottery workers with silicosis will not be benefited by being denied employment at their trade. Moreover, exclusion of silicotic workers frequently would deprive the employer of the services of highly skilled men who are an economic asset to the industry. Persons with silicosis should be allowed to work under the same conditions as healthy workers, namely, in workrooms in which siliceous dust is not allowed to escape into the breathing zone of the worker.

After dust-control equipment has been installed, it will be necessary

to make both engineering and medical studies to find out whether the control measures are effective, a service which official industrial hygiene bureaus are prepared to render. During the installation and testing of ventilating equipment and as a part of routine inspections thereafter, dust counts may be used to show whether the installation is working at full efficiency. To make certain, however, that the silicosis hazard has been removed, workers whose only dust exposure has been received in the pottery industry subsequent to the installation of dust-control equipment should be given periodic physical and X-ray examinations. If changes in the serial X-ray films indicate untoward effects from dust exposure, then further improvement in working conditions is necessary. It is also desirable to detect early cases of pulmonary tuberculosis among all employees.

## DEATHS DURING WEEK ENDED MARCH 25, 1939

[From the Weekly Health Index, issued by the Bureau of the Census, Department of Commerce]

| | Week ended Mar. 25, 1939 | Corresponding week, 1938 |
|---|---|---|
| Data from 88 large cities of the United States: | | |
| Total deaths | 9,211 | [1] 8,928 |
| Average for 3 prior years | [1] 9,480 | |
| Total deaths, first 12 weeks of year | 114,004 | 107,910 |
| Deaths under 1 year of age | 546 | [1] 557 |
| Average for 3 prior years | [1] 612 | |
| Deaths under 1 year of age, first 12 weeks of year | 6,667 | 6,557 |
| Data from industrial insurance companies: | | |
| Policies in force | 67,733,216 | 69,707,502 |
| Number of death claims | 17,850 | 13,752 |
| Death claims per 1,000 policies in force, annual rate | 13.7 | 10.3 |
| Death claims per 1,000 policies, first 12 weeks of year, annual rate | 11.2 | 10.1 |

[1] Data for 86 cities.

# PREVALENCE OF DISEASE

*No health department, State, or local, can effectively prevent or control disease without knowledge of when, where, and under what conditions cases are occurring*

## UNITED STATES

### CURRENT WEEKLY STATE REPORTS

These reports are preliminary, and the figures are subject to change when later returns are received by the State health officers.

In these and the following tables, a zero (0) indicates a positive report and has the same significance as any other figure, while leaders (----) represent no report, with the implication that cases or deaths may have occurred but were not reported to the State health officer.

*Cases of certain diseases reported by telegraph by State health officers for the week ended Apr. 1, 1939, rates per 100,000 population (annual basis), and comparison with corresponding week of 1938 and 5-year median*

| Division and State | Diphtheria | | | | Influenza | | | | Measles | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Apr. 1, 1939, rate | Apr. 1, 1939, cases | Apr. 2, 1938, cases | 1934–38, median | Apr. 1, 1939, rate | Apr. 1, 1939, cases | Apr. 2, 1938, cases | 1934–38, median | Apr. 1, 1939, rate | Apr. 1, 1939, cases | Apr. 2, 1938, cases | 1934–38, median |
| NEW ENG. | | | | | | | | | | | | |
| Maine | 6 | 1 | 1 | 0 | 133 | 22 | 8 | 8 | 187 | 31 | 164 | 132 |
| New Hampshire | 0 | 0 | 0 | 0 | ---- | ---- | ---- | ---- | ---- | ---- | 46 | 46 |
| Vermont | 0 | 0 | 0 | 0 | ---- | ---- | ---- | ---- | 576 | 43 | 126 | 72 |
| Massachusetts | 4 | 3 | 2 | 11 | ---- | ---- | ---- | ---- | 1,185 | 1,008 | 326 | 632 |
| Rhode Island | 8 | 1 | 0 | 0 | ---- | ---- | ---- | ---- | 69 | 9 | 2 | 120 |
| Connecticut | 0 | 0 | 6 | 6 | 21 | 7 | 6 | 9 | 2,128 | 717 | 32 | 79 |
| MID. ATL. | | | | | | | | | | | | |
| New York | 6 | 14 | 24 | 28 | [1] 28 | [1] 41 | [1] 13 | [1] 22 | 587 | 1,467 | 3,075 | 2,867 |
| New Jersey | 7 | 6 | 6 | 19 | 6 | 5 | 11 | 19 | 65 | 55 | 1,338 | 1,338 |
| Pennsylvania | 18 | 35 | 47 | 41 | ---- | ---- | ---- | ---- | 60 | 119 | 5,714 | 3,059 |
| E. NO. CEN. | | | | | | | | | | | | |
| Ohio | 28 | 37 | 33 | 33 | ---- | ---- | ---- | 119 | 25 | 32 | 2,464 | 1,294 |
| Indiana | 9 | 6 | 25 | 19 | 125 | 84 | 13 | 28 | 13 | 9 | 1,189 | 475 |
| Illinois | 24 | 36 | 35 | 35 | 48 | 73 | 9 | 40 | 22 | 33 | 5,282 | 1,869 |
| Michigan [2] | 21 | 20 | 13 | 12 | 257 | 243 | ---- | 6 | 415 | 393 | 4,683 | 146 |
| Wisconsin | 0 | 0 | 4 | 1 | 956 | 544 | 30 | 53 | 988 | 562 | 3,313 | 1,794 |
| W. NO. CEN. | | | | | | | | | | | | |
| Minnesota | 0 | 0 | 4 | 5 | 27 | 14 | 2 | 1 | 1,372 | 708 | 205 | 232 |
| Iowa | 14 | 7 | 3 | 6 | 316 | 156 | 14 | 8 | 324 | 160 | 199 | 151 |
| Missouri | 14 | 11 | 16 | 25 | 35 | 27 | 62 | 110 | 6 | 5 | 699 | 653 |
| North Dakota | 15 | 2 | 0 | 0 | 1,088 | 149 | 5 | 5 | 321 | 44 | 87 | 19 |
| South Dakota | 8 | 1 | 0 | 0 | 218 | 33 | ---- | ---- | 1,285 | 171 | 0 | 4 |
| Nebraska | 15 | 4 | 0 | 3 | 8 | 2 | ---- | ---- | 817 | 214 | 80 | 80 |
| Kansas | 11 | 4 | 5 | 5 | 184 | 66 | 5 | 8 | 103 | 37 | 526 | 411 |
| SO. ATL. | | | | | | | | | | | | |
| Delaware | 0 | 0 | 0 | 2 | ---- | ---- | ---- | ---- | ---- | ---- | 15 | 49 |
| Maryland [2] | 9 | 3 | 7 | 7 | 207 | 67 | 6 | 28 | 1,816 | 589 | 50 | 204 |
| Dist. of Col | 8 | 1 | 5 | 11 | 16 | 2 | 2 | 2 | 1,002 | 124 | 17 | 52 |
| Virginia | 36 | 19 | 16 | 16 | 1,743 | 930 | ---- | ---- | 789 | 421 | 811 | 811 |
| West Virginia | 24 | 9 | 10 | 10 | 1,376 | 512 | 36 | 67 | 48 | 18 | 653 | 104 |
| North Carolina | 16 | 11 | 16 | 16 | 54 | 37 | 21 | 69 | 1,180 | 808 | 3,026 | 271 |
| South Carolina [2] | 16 | 6 | 5 | 5 | 3,455 | 1,265 | 218 | 533 | 156 | 57 | 361 | 38 |
| Georgia | 13 | 8 | 7 | 7 | 1,803 | 1,086 | ---- | 124 | 286 | 172 | 456 | ---- |
| Florida [2] | 12 | 4 | 31 | 4 | 75 | 25 | 4 | 14 | 561 | 186 | 801 | 57 |

See footnotes at end of table.

*Cases of certain diseases reported by telegraph by State health officers for the week ended Apr. 1, 1939, rates per 100,000 population (annual basis), and comparison with corresponding week of 1938 and 5-year median*—Continued

| Division and State | Diphtheria | | | | Influenza | | | | Measles | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Apr. 1, 1939, rate | Apr. 1, 1939, cases | Apr. 2, 1938, cases | 1934–38, median | Apr. 1, 1939, rate | Apr. 1, 1939, cases | Apr. 2, 1938, cases | 1934–38, median | Apr. 1, 1939, rate | Apr. 1, 1939, cases | Apr. 2, 1938, cases | 1934–38, median |
| E. SO. CEN. | | | | | | | | | | | | |
| Kentucky | 14 | 8 | 13 | 12 | 450 | 259 | 30 | 47 | 52 | 30 | 502 | 502 |
| Tennessee | 19 | 11 | 6 | 8 | 738 | 424 | 49 | 87 | 145 | 82 | 415 | 142 |
| Alabama [3] | 4 | 2 | 9 | 9 | 4,403 | 2,502 | 59 | 126 | 308 | 175 | 795 | 354 |
| Mississippi [3] | 8 | 3 | 6 | 6 | ------ | ------ | ------ | ------ | ------ | ------ | ------ | ------ |
| W. SO. CEN. | | | | | | | | | | | | |
| Arkansas | 2 | 1 | 8 | 3 | 1,729 | 697 | 130 | 129 | 193 | 78 | 411 | 241 |
| Louisiana | 27 | 11 | 12 | 16 | 27 | 11 | 12 | 34 | 457 | 189 | 25 | 99 |
| Oklahoma | 14 | 7 | 7 | 5 | 690 | 343 | 95 | 96 | 523 | 260 | 111 | 111 |
| Texas [3] | 20 | 24 | 23 | 42 | 2,022 | 2,440 | 393 | 393 | 326 | 393 | 141 | 440 |
| MOUNTAIN | | | | | | | | | | | | |
| Montana | 19 | 2 | 0 | 2 | 1,854 | 198 | ------ | ------ | 1,554 | 166 | 22 | 22 |
| Idaho [4] | 0 | 0 | 1 | 1 | 776 | 76 | 16 | 3 | 2,265 | 222 | 8 | 18 |
| Wyoming [4 5] | 87 | 4 | 2 | 0 | 22 | 1 | 1 | ------ | 3,294 | 151 | 28 | 28 |
| Colorado | 39 | 8 | 7 | 9 | 144 | 30 | ------ | ------ | 1,310 | 272 | 544 | 367 |
| New Mexico | 37 | 3 | 2 | 4 | 1,248 | 101 | 19 | 11 | 321 | 26 | 110 | 110 |
| Arizona | 25 | 2 | 3 | 1 | 4,797 | 391 | 64 | 55 | 368 | 30 | 20 | 27 |
| Utah [3] | 10 | 1 | 0 | 0 | 944 | 95 | ------ | ------ | 1,490 | 150 | 477 | 24 |
| PACIFIC | | | | | | | | | | | | |
| Washington | 3 | 1 | 0 | 1 | ------ | ------ | 1 | 2 | 2,168 | 703 | 19 | 173 |
| Oregon | 10 | 2 | 1 | 1 | 393 | 79 | 39 | 48 | 288 | 58 | 31 | 52 |
| California | 16 | 19 | 32 | 32 | 454 | 553 | 105 | 105 | 3,407 | 4,154 | 686 | 798 |
| Total | 14 | 358 | 453 | 473 | 641 | 13,590 | 1,478 | 2,090 | 620 | 15,331 | 40,085 | 32,082 |
| 13 weeks | 20 | 6,566 | 7,754 | 7,982 | 412 | 113,646 | 34,820 | 91,311 | 522 | 167,831 | 414,587 | 308,237 |

| Division and State | Meningitis, meningococcus | | | | Poliomyelitis | | | | Scarlet fever | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Apr. 1, 1939, rate | Apr. 1, 1939, cases | Apr. 2, 1938, cases | 1934–38, median | Apr. 1, 1939, rate | Apr. 1, 1939, cases | Apr. 2, 1938, cases | 1934–38, median | Apr. 1, 1939, rate | Apr. 1, 1939, cases | Apr. 2, 1938, cases | 1934–38, median |
| NEW ENG. | | | | | | | | | | | | |
| Maine | 6 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 121 | 20 | 13 | 13 |
| New Hampshire | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 71 | 7 | 10 | 10 |
| Vermont | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 201 | 15 | 19 | 10 |
| Massachusetts | 2.4 | 2 | 2 | 2 | 0 | 0 | 0 | 0 | 201 | 171 | 386 | 287 |
| Rhode Island | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 34 | 29 |
| Connecticut | 3 | 1 | 3 | 1 | 0 | 0 | 0 | 0 | 255 | 86 | 143 | 116 |
| MID. ATL. | | | | | | | | | | | | |
| New York | 1.6 | 4 | 8 | 8 | 0.4 | 1 | 1 | 0 | 299 | 748 | 997 | 997 |
| New Jersey | 0 | 0 | 1 | 2 | 0 | 0 | 0 | 0 | 215 | 181 | 133 | 221 |
| Pennsylvania | 2.5 | 5 | 3 | 5 | 0 | 0 | 2 | 1 | 189 | 373 | 461 | 622 |
| E. NO. CEN. | | | | | | | | | | | | |
| Ohio | 1.5 | 2 | 7 | 8 | 0 | 0 | 1 | 1 | 563 | 732 | 293 | 440 |
| Indiana | 0 | 0 | 1 | 6 | 0 | 0 | 0 | 0 | 300 | 202 | 159 | 241 |
| Illinois | 0.7 | 1 | 1 | 15 | 0.7 | 1 | 0 | 1 | 317 | 483 | 565 | 861 |
| Michigan [3] | 2.1 | 2 | 0 | 2 | 0 | 0 | 1 | 1 | 594 | 562 | 522 | 522 |
| Wisconsin | 4 | 2 | 1 | 1 | 0 | 0 | 0 | 0 | 327 | 186 | 176 | 304 |

See footnotes at end of table.

*Cases of certain diseases reported by telegraph by State health officers for the week ended Apr. 1, 1939, rate per 100,000 population (annual basis), and comparsion with corresponding week of 1938 and 5-year median*—Continued

| Division and State | Meningitis, meningococcus | | | | Poliomyelitis | | | | Scarlet fever | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Apr. 1, 1939, rate | Apr. 1, 1939, cases | Apr. 2, 1938, cases | 1934–38, median | Apr. 1, 1939, rate | Apr. 1, 1939, cases | Apr. 2, 1938, cases | 1934–38, median | Apr. 1, 1939, rate | Apr. 1, 1939, cases | Apr. 2, 1938s cases | 1934–38, median |
| **W. NO. CEN.** | | | | | | | | | | | | |
| Minnesota | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 207 | 107 | 147 | 158 |
| Iowa | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 227 | 112 | 220 | 209 |
| Missouri | 0 | 0 | 2 | 4 | 0 | 0 | 1 | 0 | 107 | 83 | 182 | 182 |
| North Dakota | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 110 | 15 | 31 | 52 |
| South Dakota | 8 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 105 | 14 | 11 | 29 |
| Nebraska | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 168 | 44 | 37 | 30 |
| Kansas | 2.8 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 305 | 109 | 138 | 138 |
| **SO. ATL.** | | | | | | | | | | | | |
| Delaware | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 177 | 9 | 23 | 7 |
| Maryland [2] | 3 | 1 | 2 | 6 | 0 | 0 | 0 | 0 | 123 | 40 | 74 | 90 |
| Dist. of Col | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 170 | 21 | 18 | 18 |
| Virginia | 1.9 | 1 | 1 | 7 | 0 | 0 | 2 | 1 | 41 | 22 | 56 | 54 |
| West Virginia | 0 | 0 | 4 | 4 | 0 | 0 | 0 | 0 | 113 | 42 | 61 | 70 |
| North Carolina | 0 | 0 | 1 | 1 | 0 | 0 | 2 | 1 | 44 | 30 | 33 | 30 |
| South Carolina [3] | 5 | 2 | 1 | 1 | 0 | 0 | 0 | 0 | 11 | 4 | 1 | 5 |
| Georgia | 3 | 2 | 2 | 2 | 0 | 0 | 0 | 0 | 30 | 18 | 13 | 13 |
| Florida [3] | 0 | 0 | 1 | 1 | 3 | 1 | 0 | 0 | 24 | 8 | 15 | 8 |
| **E. SO. CEN.** | | | | | | | | | | | | |
| Kentucky | 1.7 | 1 | 9 | 9 | 0 | 0 | 0 | 1 | 109 | 63 | 96 | 57 |
| Tennessee | 4 | 2 | 2 | 4 | 0 | 0 | 0 | 0 | 118 | 67 | 27 | 27 |
| Alabama [3] | 4 | 2 | 5 | 3 | 0 | 0 | 0 | 0 | 16 | 9 | 3 | 9 |
| Mississippi [2] | 8 | 3 | 1 | 1 | 0 | 0 | 9 | 0 | 10 | 4 | 7 | 11 |
| **W. SO. CEN.** | | | | | | | | | | | | |
| Arkansas | 5 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 12 | 5 | 10 | 10 |
| Louisiana | 2.4 | 1 | 4 | 1 | 0 | 0 | 1 | 0 | 17 | 7 | 10 | 13 |
| Oklahoma | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 66 | 33 | 25 | 24 |
| Texas [3] | 1.7 | 2 | 3 | 3 | 0 | 0 | 0 | 2 | 47 | 57 | 118 | 117 |
| **MOUNTAIN** | | | | | | | | | | | | |
| Montana | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 178 | 19 | 16 | 16 |
| Idaho [4] | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 82 | 8 | 11 | 11 |
| Wyoming [4] [5] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 153 | 7 | 17 | 17 |
| Colorado | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 164 | 34 | 71 | 71 |
| New Mexico | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 136 | 11 | 14 | 31 |
| Arizona | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 37 | 3 | 5 | 12 |
| Utah [3] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 228 | 23 | 47 | 47 |
| **PACIFIC** | | | | | | | | | | | | |
| Washington | 3 | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 176 | 57 | 44 | 45 |
| Oregon | 5 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 89 | 18 | 62 | 38 |
| California | 0.8 | 1 | 5 | 5 | 0 | 0 | 0 | 3 | 160 | 195 | 213 | 213 |
| Total | 1.8 | 44 | 77 | 173 | 0.1 | 3 | 24 | 24 | 201 | 5,064 | 5,767 | 7,609 |
| 13 weeks | 2.1 | 682 | 1,161 | 1,652 | 0.6 | 187 | 279 | 277 | 211 | 68,971 | 79,381 | 88,382 |

See footnotes at end of table.

*Cases of certain diseases reported by telegraph by State health officers for the week ended Apr. 1, 1939, rates per 100,000 population (annual basis), and comparison with corresponding week of 1938 and 5-year median*—Continued

| Division and State | Smallpox | | | | Typhoid and paratyphoid fever | | | | Whooping cough | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Apr. 1, 1939, rate | Apr. 1, 1939, cases | Apr. 2, 1938, cases | 1934–38, median | Apr. 1, 1939, rate | Apr. 1, 1939, cases | Apr. 2, 1938, cases | 1934–38, median | Apr. 1, 1939, rate | Apr. 1, 1939, cases | Apr. 2, 1938, cases |
| NEW ENG. | | | | | | | | | | | |
| Maine | 0 | 0 | 0 | 0 | 54 | 9 | 0 | 2 | 422 | 70 | 32 |
| New Hampshire | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 |
| Vermont | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 563 | 42 | 17 |
| Massachusetts | 0 | 0 | 0 | 0 | 2 | 2 | 0 | 0 | 268 | 228 | 97 |
| Rhode Island | 0 | 0 | 0 | 0 | 8 | 1 | 0 | 0 | 771 | 101 | 36 |
| Connecticut | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 246 | 83 | 49 |
| MID. ATL. | | | | | | | | | | | |
| New York | 1 | 3 | 0 | 0 | 2 | 5 | 4 | 7 | 203 | 506 | 393 |
| New Jersey | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 3 | 546 | 459 | 229 |
| Pennsylvania | 0 | 0 | 0 | 0 | 4 | 8 | 5 | 5 | 177 | 349 | 231 |
| E. NO. CEN. | | | | | | | | | | | |
| Ohio | 19 | 25 | 15 | 0 | 2 | 2 | 2 | 6 | 161 | 209 | 142 |
| Indiana | 59 | 40 | 62 | 3 | 4 | 3 | 2 | 1 | 49 | 33 | 30 |
| Illinois | 12 | 18 | 39 | 14 | 6 | 9 | 4 | 4 | 217 | 331 | 83 |
| Michigan [2] | 19 | 18 | 9 | 1 | 2 | 2 | 5 | 3 | 184 | 174 | 228 |
| Wisconsin | 7 | 4 | 12 | 12 | 2 | 1 | 0 | 1 | 353 | 201 | 180 |
| W. NO. CEN. | | | | | | | | | | | |
| Minnesota | 29 | 15 | 23 | 13 | 0 | 0 | 3 | 1 | 95 | 49 | 29 |
| Iowa | 69 | 34 | 44 | 17 | 0 | 0 | 0 | 1 | 24 | 12 | 28 |
| Missouri | 33 | 26 | 26 | 16 | 0 | 0 | 4 | 2 | 15 | 12 | 43 |
| North Dakota | 22 | 3 | 5 | 5 | 7 | 1 | 0 | 0 | 0 | 0 | 35 |
| South Dakota | 53 | 7 | 14 | 5 | 0 | 0 | 0 | 0 | 8 | 1 | 18 |
| Nebraska | 42 | 11 | 0 | 9 | 0 | 0 | 0 | 0 | 34 | 9 | 12 |
| Kansas | 34 | 12 | 8 | 8 | 0 | 0 | 0 | 0 | 22 | 8 | 122 |
| SO. ATL. | | | | | | | | | | | |
| Delaware | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 39 | 2 | 6 |
| Maryland [2] | 0 | 0 | 0 | 0 | 6 | 2 | 3 | 3 | 59 | 19 | 94 |
| Dist. of Col | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 283 | 35 | 14 |
| Virginia | 0 | 0 | 0 | 0 | 9 | 5 | 9 | 4 | 97 | 52 | 149 |
| West Virginia | 0 | 0 | 0 | 0 | 11 | 4 | 4 | 4 | 73 | 27 | 49 |
| North Carolina | 0 | 0 | 0 | 0 | 1 | 1 | 2 | 4 | 418 | 286 | 564 |
| South Carolina [3] | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 2 | 303 | 111 | 80 |
| Georgia | 2 | 1 | 0 | 1 | 7 | 4 | 1 | 3 | 85 | 51 | 35 |
| Florida [2] | 0 | 0 | 0 | 0 | 12 | 4 | 6 | 2 | 105 | 35 | 28 |
| E. SO. CEN. | | | | | | | | | | | |
| Kentucky | 5 | 3 | 9 | 0 | 5 | 3 | 7 | 3 | 35 | 20 | 74 |
| Tennessee | 18 | 10 | 3 | 0 | 5 | 3 | 2 | 2 | 81 | 46 | 27 |
| Alabama [3] | 7 | 4 | 1 | 0 | 5 | 3 | 1 | 2 | 95 | 54 | 8 |
| Mississippi [2] | 0 | 0 | 2 | 1 | 5 | 2 | 4 | 4 | | | |
| W. SO. CEN. | | | | | | | | | | | |
| Arkansas | 7 | 3 | 12 | 1 | 2 | 1 | 4 | 1 | 77 | 31 | 49 |
| Louisiana | 2 | 1 | 2 | 1 | 68 | 28 | 15 | 10 | 5 | 2 | 23 |
| Oklahoma | 80 | 40 | 21 | 1 | 2 | 1 | 3 | 3 | 8 | 4 | 47 |
| Texas [3] | 33 | 40 | 29 | 13 | 4 | 5 | 18 | 13 | 108 | 130 | 414 |
| MOUNTAIN | | | | | | | | | | | |
| Montana | 47 | 5 | 7 | 5 | 0 | 0 | 1 | 1 | 19 | 2 | 22 |
| Idaho [4] | 31 | 3 | 17 | 7 | 10 | 1 | 1 | 0 | 41 | 4 | 14 |
| Wyoming [4 5] | 22 | 1 | 3 | 2 | 0 | 0 | 1 | 0 | 44 | 2 | 18 |
| Colorado | 34 | 7 | 10 | 10 | 0 | 0 | 0 | 0 | 274 | 57 | 27 |
| New Mexico | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 148 | 12 | 31 |
| Arizona | 110 | 9 | 8 | 0 | 12 | 1 | 1 | 1 | 135 | 11 | 37 |
| Utah [2] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 348 | 35 | 47 |

See footnotes at end of table.

*Cases of certain diseases reported by telegraph by State health officers for the week ended Apr. 1, 1939, rates per 100,000 population (annual basis), and comparison with corresponding week of 1938 and 5-year median*—Continued

| Division and State | Smallpox | | | | Typhoid and paratyphoid fever | | | | Whooping cough | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Apr. 1, 1939, rate | Apr. 1, 1939, cases | Apr. 2, 1938, cases | 1934–38, median | Apr. 1, 1939, rate | Apr. 1, 1939, cases | Apr. 2, 1938, cases | 1934–38, median | Apr. 1, 1939, rate | Apr. 1, 1939, cases | Apr. 2, 1938, cases |
| PACIFIC | | | | | | | | | | | |
| Washington | 6 | 2 | 16 | 15 | 0 | 0 | 2 | 2 | 59 | 19 | 153 |
| Oregon | 99 | 20 | 17 | 12 | 40 | 8 | 1 | 1 | 45 | 9 | 17 |
| California | 14 | 17 | 44 | 4 | 2 | 2 | 6 | 5 | 145 | 177 | 477 |
| Total | 15 | 382 | 458 | 219 | 5 | 121 | 128 | 131 | 166 | 4,110 | 4,545 |
| 13 weeks | 15 | 4,902 | 7,164 | 2,827 | 5 | 1,527 | 1,566 | 1,566 | 170 | 54,751 | 54,013 |

[1] New York City only.
[2] Period ended earlier than Saturday.
[3] Typhus fever, week ended Apr. 1, 1939, 13 cases as follows: South Carolina, 2; Florida, 1; Alabama, 3; Texas, 7.
[4] Rocky Mountain spotted fever, week ended Apr. 1, 1939, 2 cases as follows: Idaho, 1; Wyoming, 1.
[5] Colorado tick fever, week ended Apr. 1, 1939, Wyoming, 1 case.

## SUMMARY OF MONTHLY REPORTS FROM STATES

The following summary of cases reported monthly by States is published weekly and covers only those States from which reports are received during the current week.

| State | Meningitis, meningococcus | Diphtheria | Influenza | Malaria | Measles | Pellagra | Poliomyelitis | Scarlet fever | Smallpox | Typhoid and paratyphoid fever |
|---|---|---|---|---|---|---|---|---|---|---|
| *January 1939* | | | | | | | | | | |
| Puerto Rico | 1 | 47 | 282 | 2,776 | 1 | ---- | 0 | ---- | 0 | 24 |
| South Carolina | ---- | 143 | 2,919 | 333 | 25 | 108 | 2 | 63 | 0 | 10 |
| *February 1939* | | | | | | | | | | |
| Ohio | 10 | 112 | 767 | ---- | 113 | ---- | 1 | 2,169 | 121 | 8 |
| South Carolina | ---- | 147 | 3,037 | 304 | 105 | 145 | 5 | 38 | 1 | 12 |
| Utah | 2 | 5 | 160 | ---- | 537 | ---- | 1 | 165 | 0 | 0 |
| Wisconsin | 2 | 5 | 2,563 | ---- | 4,988 | ---- | 1 | 1,451 | 37 | 2 |

*January 1939*

| | Cases |
|---|---|
| Puerto Rico: | |
| Chickenpox | 37 |
| Dysentery | 6 |
| Leprosy | 1 |
| Mumps | 1 |
| Ophthalmia neonatorum | 4 |
| Puerperal septicemia | 2 |
| Tetanus | 10 |
| Tetanus, infantile | 3 |
| Whooping cough | 184 |
| South Carolina: | |
| Chickenpox | 179 |
| Diarrhea | 283 |
| German measles | 12 |
| Hookworm disease | 164 |
| Mumps | 133 |
| Rabies in animals | 34 |
| Scabies | 22 |
| Tularaemia | 13 |
| Typhus fever | 29 |
| Undulant fever | 1 |
| Whooping cough | 283 |

*February 1939*

| | Cases |
|---|---|
| Chickenpox: | |
| Ohio | 2,250 |
| South Carolina | 230 |
| Utah | 685 |
| Wisconsin | 2,991 |

*February 1939*—Continued

| | Cases |
|---|---|
| Dengue: | |
| South Carolina | 3 |
| Diarrhea: | |
| Ohio (under 2 years; enteritis included) | 11 |
| South Carolina | 335 |
| Encephalitis, epidemic or lethargic: | |
| Ohio | 3 |
| South Carolina | 1 |
| German measles: | |
| Ohio | 29 |
| South Carolina | 14 |
| Utah | 20 |
| Wisconsin | 32 |
| Hookworm disease: | |
| South Carolina | 148 |
| Lead poisoning: | |
| Ohio | 2 |
| Mumps: | |
| Ohio | 1,928 |
| South Carolina | 184 |
| Utah | 975 |
| Wisconsin | 1,059 |
| Ophthalmia neonatorum: | |
| Ohio | 7 |
| South Carolina | 4 |
| Utah | 1 |
| Puerperal septicemia: | |
| Ohio | 3 |

*February 1939*—Continued

| | Cases |
|---|---|
| Rabies in animals: | |
| South Carolina | 26 |
| Scabies: | |
| South Carolina | 3 |
| Septic sore throat: | |
| Ohio | 30 |
| South Carolina | 25 |
| Utah | 4 |
| Wisconsin | 28 |
| Tetanus: | |
| South Carolina | 1 |
| Trachoma: | |
| Wisconsin | 1 |
| Trichinosis: | |
| Ohio | 7 |
| Tularaemia: | |
| Ohio | 8 |
| South Carolina | 2 |
| Typhus fever: | |
| South Carolina | 25 |
| Undulant fever: | |
| Ohio | 8 |
| Utah | 3 |
| Wisconsin | 4 |
| Whooping cough: | |
| Ohio | 807 |
| South Carolina | 336 |
| Utah | 165 |
| Wisconsin | 1,483 |

## WEEKLY REPORTS FROM CITIES

*City reports for week ended March 25, 1939*

This table summarizes the reports received weekly from a selected list of 140 cities for the purpose of showing a cross section of the current urban incidence of the communicable diseases listed in the table.

| State and city | Diphtheria cases | Influenza | | Measles cases | Pneumonia deaths | Scarlet fever cases | Smallpox cases | Tuberculosis deaths | Typhoid fever cases | Whooping cough cases | Deaths, all causes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Cases | Deaths | | | | | | | | |
| Data for 90 cities: | | | | | | | | | | | |
| 5-year average | 174 | 409 | 103 | 8,568 | 913 | 2,589 | 27 | 400 | 21 | 1,424 | ------ |
| Current week | 95 | 815 | 140 | 4,814 | 741 | 1,562 | 33 | 351 | 17 | 1,297 | ------ |
| Maine: | | | | | | | | | | | |
| Portland | 0 | ------ | 1 | 0 | 3 | 1 | 0 | 0 | 0 | 15 | 28 |
| New Hampshire: | | | | | | | | | | | |
| Concord | 0 | ------ | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 12 |
| Manchester | 0 | ------ | 3 | 0 | 2 | 1 | 0 | 1 | 0 | 0 | 29 |
| Nashua | 0 | ------ | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 14 |
| Vermont: | | | | | | | | | | | |
| Barre | 0 | ------ | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| Burlington | 0 | ------ | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 |
| Rutland | 0 | ------ | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 |
| Massachusetts: | | | | | | | | | | | |
| Boston | 0 | ------ | 10 | 136 | 32 | 54 | 0 | 12 | 0 | 23 | 278 |
| Fall River | 0 | ------ | 0 | 1 | 1 | 2 | 0 | 0 | 0 | 0 | 30 |
| Springfield | 0 | ------ | 0 | 26 | 1 | 3 | 0 | 0 | 0 | 1 | 34 |
| Worcester | 1 | ------ | 0 | 0 | 9 | 0 | 0 | 1 | 0 | 31 | 63 |
| Rhode Island: | | | | | | | | | | | |
| Pawtucket | 0 | ------ | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 16 |
| Providence | 0 | 8 | 0 | 17 | 4 | 9 | 0 | 0 | 0 | 106 | 67 |
| Connecticut: | | | | | | | | | | | |
| Bridgeport | 0 | 1 | 1 | 1 | 6 | 2 | 0 | 4 | 0 | 0 | 43 |
| Hartford | 0 | ------ | 0 | 218 | 9 | 12 | 0 | 0 | 0 | 18 | 49 |
| New Haven | 0 | 1 | 2 | 188 | 5 | 8 | 0 | 0 | 0 | 19 | 50 |
| New York: | | | | | | | | | | | |
| Buffalo | 0 | ------ | 1 | 152 | 11 | 74 | 0 | 10 | 0 | 42 | 154 |
| New York | 29 | 60 | 5 | 111 | 128 | 257 | 0 | 77 | 1 | 144 | 1,579 |
| Rochester | 0 | 3 | 0 | 139 | 6 | 24 | 0 | 1 | 0 | 11 | 65 |
| Syracuse | 0 | ------ | 0 | 79 | 3 | 11 | 0 | 0 | 0 | 37 | 53 |
| New Jersey: | | | | | | | | | | | |
| Camden | 0 | ------ | 1 | 0 | 1 | 6 | 0 | 1 | 0 | 2 | 33 |
| Newark | 0 | ------ | 0 | 5 | 8 | 57 | 0 | 3 | 1 | 64 | 102 |
| Trenton | 0 | ------ | 0 | 0 | 1 | 5 | 0 | 2 | 0 | 8 | 37 |
| Pennsylvania: | | | | | | | | | | | |
| Philadelphia | 3 | 4 | 5 | 30 | 20 | 75 | 0 | 19 | 2 | 87 | 521 |
| Pittsburgh | 4 | 10 | 8 | 1 | 24 | 31 | 0 | 5 | 0 | 15 | 180 |
| Reading | 1 | ------ | 0 | 1 | 3 | 1 | 0 | 1 | 0 | 0 | 31 |
| Scranton | 0 | ------ | ------ | 0 | 0 | 13 | 0 | 0 | 0 | 3 | ------ |
| Ohio: | | | | | | | | | | | |
| Cincinnati | 4 | 5 | 11 | 0 | 18 | 23 | 0 | 11 | 0 | 2 | 148 |
| Cleveland | 2 | 55 | 5 | 5 | 17 | 86 | 0 | 8 | 0 | 38 | 222 |
| Columbus | 0 | ------ | 0 | 4 | 6 | 6 | 0 | 1 | 0 | 2 | 88 |
| Toledo | 0 | 5 | 4 | 1 | 8 | 19 | 0 | 8 | 0 | 20 | 93 |
| Indiana: | | | | | | | | | | | |
| Anderson | 0 | ------ | 1 | 0 | 2 | 4 | 1 | 0 | 0 | 1 | 13 |
| Fort Wayne | 1 | ------ | 1 | 0 | 8 | 4 | 0 | 0 | 0 | 0 | 47 |
| Indianapolis | 3 | ------ | 4 | 0 | 14 | 34 | 12 | 8 | 0 | 28 | 127 |
| Muncie | 0 | ------ | 1 | 1 | 0 | 3 | 0 | 0 | 0 | 0 | 10 |
| South Bend | 0 | ------ | 0 | 0 | 5 | 3 | 0 | 1 | 0 | 11 | 18 |
| Terre Haute | 0 | ------ | 1 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 15 |
| Illinois: | | | | | | | | | | | |
| Alton | 0 | 1 | 1 | 0 | 3 | 1 | 0 | 2 | 0 | 0 | 19 |
| Chicago | 7 | 26 | 7 | 7 | 50 | 216 | 0 | 43 | 0 | 131 | 760 |
| Elgin | 0 | ------ | 0 | 0 | 3 | 3 | 0 | 0 | 1 | 8 | 10 |
| Moline | 0 | ------ | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 5 |
| Springfield | 0 | 1 | 1 | 0 | 2 | 2 | 0 | 0 | 0 | 8 | 31 |
| Michigan: | | | | | | | | | | | |
| Detroit | 13 | 5 | 1 | 13 | 23 | 137 | 0 | 21 | 0 | 77 | 264 |
| Flint | 0 | ------ | 4 | 51 | 10 | 23 | 0 | 0 | 0 | 0 | 37 |
| Grand Rapids | 0 | ------ | 5 | 3 | 7 | 37 | 0 | 0 | 0 | 6 | 62 |
| Wisconsin: | | | | | | | | | | | |
| Kenosha | 0 | ------ | 0 | 1 | 0 | 6 | 0 | 0 | 0 | 21 | 9 |
| Madison | 0 | ------ | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 10 | 9 |
| Milwaukee | 0 | 5 | 5 | 1 | 13 | 34 | 0 | 1 | 0 | 78 | 135 |
| Racine | 0 | ------ | 0 | 3 | 0 | 4 | 0 | 1 | 0 | 2 | 16 |
| Superior | 0 | ------ | 0 | 1 | 3 | 0 | 0 | 0 | 0 | 0 | 8 |

*City reports for week ended March 25, 1939*—Continued

| State and city | Diphtheria cases | Influenza | | Measles cases | Pneumonia deaths | Scarlet fever cases | Smallpox cases | Tuberculosis deaths | Typhoid fever cases | Whooping cough cases | Deaths, all causes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Cases | Deaths | | | | | | | | |
| Minnesota: | | | | | | | | | | | |
| Duluth | 0 | ---- | 0 | 2 | 3 | 5 | 0 | 1 | 0 | 1 | 25 |
| Minneapolis | 0 | ---- | 5 | 251 | 6 | 25 | 5 | 0 | 0 | 35 | 94 |
| St. Paul | 0 | 3 | 3 | 182 | 9 | 20 | 0 | 0 | 0 | 4 | 56 |
| Iowa: | | | | | | | | | | | |
| Cedar Rapids | 0 | ---- | ---- | 0 | ---- | 0 | 0 | ---- | 0 | 0 | ---- |
| Davenport | 0 | ---- | ---- | 0 | ---- | 11 | 1 | ---- | 0 | 1 | ---- |
| Des Moines | 0 | ---- | 0 | 0 | 0 | 20 | 1 | 0 | 0 | 1 | 44 |
| Sioux City | 0 | ---- | ---- | 7 | ---- | 1 | 0 | ---- | 0 | 4 | ---- |
| Waterloo | 2 | ---- | ---- | 0 | ---- | 8 | 0 | ---- | 0 | 2 | ---- |
| Missouri: | | | | | | | | | | | |
| Kansas City | 1 | ---- | 2 | 2 | 12 | 9 | 0 | 4 | 0 | 2 | 113 |
| St. Joseph | 0 | ---- | 0 | 0 | 9 | 0 | 0 | 0 | 0 | 1 | 35 |
| St. Louis | 3 | 6 | 0 | 0 | 19 | 28 | 1 | 7 | 0 | 11 | 238 |
| North Dakota: | | | | | | | | | | | |
| Fargo | 0 | ---- | 0 | 3 | 2 | 2 | 0 | 0 | 0 | 0 | 13 |
| Grand Forks | 0 | ---- | ---- | 0 | ---- | 0 | 0 | ---- | 0 | 0 | ---- |
| Minot | 0 | 25 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 7 |
| South Dakota: | | | | | | | | | | | |
| Aberdeen | 0 | ---- | ---- | 1 | ---- | 0 | 1 | ---- | 0 | 0 | ---- |
| Sioux Falls | 0 | ---- | 0 | 6 | 0 | 6 | 0 | 0 | 0 | 0 | 9 |
| Nebraska: | | | | | | | | | | | |
| Lincoln | 0 | ---- | ---- | 54 | ---- | 1 | 0 | ---- | 0 | 1 | ---- |
| Omaha | 0 | ---- | 1 | 4 | 6 | 2 | 2 | 0 | 0 | 1 | 56 |
| Kansas: | | | | | | | | | | | |
| Lawrence | 0 | 4 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 14 |
| Topeka | 0 | 1 | 1 | 0 | 2 | 4 | 0 | 0 | 0 | 1 | 19 |
| Wichita | 0 | 7 | 1 | 0 | 4 | 0 | 0 | 0 | 0 | 1 | 23 |
| Delaware: | | | | | | | | | | | |
| Wilmington | 0 | ---- | 0 | 2 | 6 | 6 | 0 | 0 | 0 | 2 | 33 |
| Maryland: | | | | | | | | | | | |
| Baltimore | 1 | 9 | 4 | 652 | 26 | 23 | 0 | 11 | 0 | 10 | 237 |
| Cumberland | 0 | ---- | 0 | 0 | 1 | 5 | 0 | 0 | 0 | 0 | 13 |
| Frederick | 0 | ---- | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| Dist. of Col.: | | | | | | | | | | | |
| Washington | 1 | 3 | 2 | 68 | 11 | 16 | 0 | 7 | 0 | 35 | 178 |
| Virginia: | | | | | | | | | | | |
| Lynchburg | 3 | ---- | 0 | 215 | 3 | 0 | 0 | 1 | 0 | 19 | 14 |
| Norfolk | 0 | 23 | 1 | 17 | 1 | 2 | 0 | 1 | 0 | 7 | 28 |
| Richmond | 0 | ---- | 0 | 90 | 4 | 1 | 0 | 0 | 0 | 1 | 53 |
| Roanoke | 0 | ---- | 0 | 0 | 2 | 1 | 0 | 1 | 0 | 0 | 16 |
| West Virginia: | | | | | | | | | | | |
| Charleston | 0 | 15 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 20 |
| Huntington | 2 | ---- | ---- | 0 | ---- | 1 | 0 | ---- | 0 | 0 | ---- |
| Wheeling | 0 | ---- | 0 | 1 | 3 | 4 | 0 | 0 | 1 | 14 | 40 |
| North Carolina: | | | | | | | | | | | |
| Gastonia | 0 | ---- | ---- | 0 | ---- | 1 | 0 | ---- | 0 | 0 | ---- |
| Raleigh | 0 | ---- | 0 | 0 | 2 | 0 | 0 | 1 | 0 | 1 | 21 |
| Wilmington | 0 | ---- | 0 | 2 | 0 | 0 | 0 | 0 | 3 | 2 | 11 |
| Winston-Salem | 2 | 4 | 0 | 164 | 2 | 1 | 0 | 0 | 0 | 0 | 13 |
| South Carolina: | | | | | | | | | | | |
| Charleston | 0 | 23 | 1 | 0 | 2 | 1 | 0 | 0 | 0 | 4 | 22 |
| Florence | 0 | ---- | 0 | 13 | 2 | 0 | 0 | 0 | 0 | 0 | 9 |
| Greenville | 0 | ---- | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 7 |
| Georgia: | | | | | | | | | | | |
| Atlanta | 0 | 143 | 2 | 0 | 7 | 4 | 0 | 4 | 0 | 1 | 92 |
| Brunswick | 0 | ---- | 0 | 27 | 2 | 0 | 0 | 0 | 0 | 0 | 6 |
| Savannah | 0 | 105 | 1 | 3 | 5 | 1 | 0 | 1 | 0 | 3 | 43 |
| Florida: | | | | | | | | | | | |
| Miami | 0 | 12 | 1 | 1 | 3 | 2 | 0 | 3 | 1 | 9 | 44 |
| Tampa | 0 | 2 | 2 | 85 | 0 | 1 | 0 | 1 | 0 | 0 | 27 |
| Kentucky: | | | | | | | | | | | |
| Ashland | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 |
| Covington | 1 | 1 | 0 | 2 | 3 | 11 | 1 | 3 | 0 | 0 | 21 |
| Lexington | 0 | ---- | 0 | 1 | 3 | 1 | 0 | 1 | 0 | 0 | 19 |
| Louisville | 0 | 94 | 1 | 0 | 10 | 7 | 0 | 3 | 0 | 2 | 76 |
| Tennessee: | | | | | | | | | | | |
| Knoxville | 0 | 3 | 0 | 0 | 5 | 5 | 0 | 1 | 0 | 0 | 22 |
| Memphis | 0 | ---- | 5 | 0 | 11 | 14 | 0 | 11 | 0 | 4 | 98 |
| Nashville | 0 | ---- | 3 | 0 | 2 | 6 | 10 | 2 | 0 | 0 | 50 |
| Alabama: | | | | | | | | | | | |
| Birmingham | 2 | 157 | 6 | 0 | 9 | 1 | 0 | 2 | 0 | 2 | 85 |
| Mobile | 1 | ---- | 3 | 0 | 2 | 2 | 0 | 1 | 0 | 0 | 25 |
| Montgomery | 0 | 7 | ---- | 7 | ---- | 0 | 0 | ---- | 0 | 0 | ---- |

*City reports for week ended March 25, 1939*—Continued

| State and city | Diphtheria cases | Influenza | | Measles cases | Pneumonia deaths | Scarlet fever cases | Smallpox cases | Tuberculosis deaths | Typhoid fever cases | Whooping cough cases | Deaths, all causes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Cases | Deaths | | | | | | | | |
| Arkansas: | | | | | | | | | | | |
| Fort Smith | 0 | 9 | ---- | 21 | ---- | 1 | 0 | ---- | 0 | 0 | ---- |
| Little Rock | 0 | 3 | 1 | 0 | 2 | 1 | 0 | 0 | 0 | 0 | 3 |
| Louisiana: | | | | | | | | | | | |
| Lake Charles | 0 | ---- | 0 | 43 | 2 | 0 | 0 | 1 | 0 | 1 | 11 |
| New Orleans | 6 | 16 | 5 | 65 | 15 | 8 | 1 | 9 | 8 | 19 | 152 |
| Shreveport | 0 | ---- | 0 | 3 | 9 | 2 | 0 | 2 | 0 | 0 | 49 |
| Oklahoma: | | | | | | | | | | | |
| Oklahoma City | 4 | 20 | 1 | 0 | 5 | 3 | 1 | 1 | 0 | 0 | 38 |
| Tulsa | 0 | ---- | ---- | 14 | ---- | 6 | 0 | ---- | 0 | 0 | ---- |
| Texas: | | | | | | | | | | | |
| Dallas | 0 | 25 | 4 | 6 | 7 | 5 | 1 | 5 | 0 | 4 | 80 |
| Fort Worth | 0 | 89 | 0 | 3 | 13 | 2 | 0 | 2 | 0 | 0 | 49 |
| Galveston | 0 | ---- | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 16 |
| Houston | 0 | 4 | 1 | 16 | 9 | 1 | 0 | 4 | 0 | 1 | 65 |
| San Antonio | 0 | 2 | 2 | 12 | 3 | 1 | 0 | 9 | 0 | 3 | 68 |
| Montana: | | | | | | | | | | | |
| Billings | 0 | ---- | 0 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 6 |
| Great Falls | 0 | ---- | 0 | 18 | 2 | 1 | 0 | 0 | 0 | 0 | 9 |
| Helena | 0 | ---- | 0 | 29 | 2 | 1 | 0 | 1 | 0 | 0 | 7 |
| Missoula | 0 | ---- | 0 | 29 | 0 | 0 | 0 | 0 | 0 | 0 | 9 |
| Idaho: | | | | | | | | | | | |
| Boise | 0 | ---- | 0 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 6 |
| Colorado: | | | | | | | | | | | |
| Colorado Springs | 1 | ---- | 0 | 72 | 1 | 12 | 0 | 1 | 0 | 15 | 13 |
| Denver | 1 | ---- | 0 | 20 | 8 | 0 | 0 | 7 | 0 | 36 | 98 |
| Pueblo | 0 | ---- | 0 | 68 | 2 | 1 | 0 | 0 | 1 | 21 | 10 |
| New Mexico: | | | | | | | | | | | |
| Albuquerque | 0 | 16 | 3 | 9 | 1 | 1 | 0 | 1 | 0 | 0 | 12 |
| Utah: | | | | | | | | | | | |
| Salt Lake City | 0 | ---- | 0 | 5 | 4 | 8 | 0 | 1 | 0 | 0 | 33 |
| Washington: | | | | | | | | | | | |
| Seattle | 0 | ---- | 2 | 113 | 6 | 4 | 0 | 3 | 0 | 7 | 104 |
| Spokane | 0 | ---- | 0 | 197 | 3 | 0 | 0 | 0 | 0 | 0 | 32 |
| Tacoma | 0 | ---- | 0 | 2 | 4 | 2 | 0 | 1 | 0 | 0 | 25 |
| Oregon: | | | | | | | | | | | |
| Portland | 1 | 1 | 0 | 3 | 5 | 7 | 6 | 2 | 0 | 0 | 87 |
| Salem | 0 | 1 | ---- | 0 | ---- | 3 | 0 | ---- | 0 | 0 | ---- |
| California: | | | | | | | | | | | |
| Los Angeles | 4 | 90 | 4 | 801 | 24 | 64 | 0 | 12 | 0 | 17 | 334 |
| Sacramento | 0 | ---- | 0 | 258 | 1 | 2 | 1 | 1 | 0 | 0 | 35 |
| San Francisco | 2 | 13 | 0 | 222 | 14 | 27 | 0 | 9 | 0 | 7 | 196 |

| State and city | Meningitis, meningococcus | | Poliomyelitis cases | State and city | Meningitis, meningococcus | | Poliomyelitis cases |
|---|---|---|---|---|---|---|---|
| | Cases | Deaths | | | Cases | Deaths | |
| Massachusetts: | | | | Virginia: | | | |
| Springfield | 1 | 0 | 0 | Roanoke | 1 | 0 | 0 |
| Pennsylvania: | | | | South Carolina: | | | |
| Philadelphia | 3 | 0 | 0 | Charleston | 0 | 0 | 4 |
| Indiana: | | | | Louisiana: | | | |
| Fort Wayne | 1 | 0 | 0 | New Orleans | 1 | 0 | 0 |
| North Dakota: | | | | Shreveport | 0 | 1 | 0 |
| Fargo | 0 | 1 | 0 | Texas: | | | |
| Kansas: | | | | Dallas | 1 | 0 | 0 |
| Topeka | 1 | 0 | 0 | California: | | | |
| District of Columbia: | | | | San Francisco | 1 | 0 | 0 |
| Washington | 1 | 0 | 0 | | | | |

*Encephalitis, epidemic or lethargic.*—Cases: New York, 3; Topeka, 1; Portland, Oreg., 1.
*Pellagra.*—Cases: Charleston, S. C., 1; Atlanta, 2; Brunswick, 1; Savannah, 2.
*Typhus fever.*—Cases: New York, 1; Baltimore, 1.

# FOREIGN AND INSULAR

## CANADA

*Provinces—Communicable diseases—Week ended March 11, 1939.*—During the week ended March 11, 1939, cases of certain communicable diseases were reported by the Department of Pensions and National Health of Canada as follows:

| Disease | Prince Edward Island | Nova Scotia | New Brunswick | Quebec | Ontario | Manitoba | Saskatchewan | Alberta | British Columbia | Total |
|---|---|---|---|---|---|---|---|---|---|---|
| Cerebrospinal meningitis | | 1 | | 1 | | | | | | 2 |
| Chickenpox | | 15 | 2 | 144 | 239 | 6 | 44 | 31 | 84 | 565 |
| Diphtheria | 1 | 3 | 2 | 19 | 7 | | 2 | | | 34 |
| Dysentery | | | | | 2 | | | | 8 | 10 |
| Influenza | | 2,184 | 2 | | 1,371 | 1 | | | 31 | 3,589 |
| Lethargic encephalitis | | | | | | | 1 | | | 1 |
| Measles | | 49 | | 185 | 845 | 12 | 1 | 5 | 2 | 1,099 |
| Mumps | | 4 | | 29 | 91 | 33 | 2 | 3 | 3 | 165 |
| Pneumonia | | 34 | | | 73 | | 1 | | 13 | 121 |
| Scarlet fever | | 4 | 10 | 55 | 196 | 21 | 27 | 29 | 15 | 357 |
| Smallpox | | | | | | | 2 | | 2 | 4 |
| Trachoma | | | | | | | | | 1 | 1 |
| Tuberculosis | 1 | 4 | 4 | 50 | 58 | 2 | 19 | 1 | 9 | 148 |
| Typhoid and paratyphoid fever | | | 1 | 10 | 2 | | | | 1 | 14 |
| Whooping cough | | 14 | 1 | 65 | 171 | 11 | | 4 | 46 | 312 |

## CHINA

*Hongkong—Cerebrospinal meningitis.*—According to a report dated March 4, 1939, cerebrospinal meningitis was epidemic in Hongkong and the adjacent territory, with 82 cases reported in the Colony and leased territories during February. All cases were in Chinese. The report stated that the crowding of refugees into inadequate and poorly ventilated quarters was an important factor in the increase of this disease as compared with last year.

*Other communicable diseases.*—Tuberculosis was made a notifiable disease in Hongkong by an amendment to the Quarantine and Prevention of Disease Ordinance dated January 18, 1939. The numbers of cases of tuberculosis and deaths therefrom in Hongkong during February were given as follows:

| Week ended: | *Cases* | *Deaths* |
|---|---|---|
| February 4 | 190 | 69 |
| February 11 | 129 | 65 |
| February 18 | 140 | 80 |
| February 25 | 123 | 58 |

During the month of February, there were also reported in Hongkong 13 deaths from typhoid fever, 36 cases of diphtheria, with 12 deaths, 206 cases of measles, with 107 deaths, and 35 cases of dysentery, with 20 deaths.

## GERMANY

*Vital statistics—Third quarter 1938.*—Following are vital statistics for Germany for the third quarter of 1938:

| | Number | Rate per 1,000 inhabitants |
|---|---|---|
| Marriages | 177,522 | 9.1 |
| Live births | 352,142 | 19.3 |
| Stillbirths | 7,536 | |
| Deaths | 202,767 | 10.7 |
| Deaths under 1 year of age | 20,730 | [1] 5.8 |

[1] Per 100 live births.

## IRISH FREE STATE

*Vital statistics—Quarter ended December 31, 1938.*—The following vital statistics for the Irish Free State for the quarter ended December 31, 1938, are taken from the Quarterly Return of Marriages, Births, and Deaths, issued by the Registrar General and are provisional:

| | Number | Rate per 1,000 population | | Number | Rate per 1,000 population |
|---|---|---|---|---|---|
| Marriages | 3,317 | 4.5 | Deaths from—Continued. | | |
| Births | 13,340 | 18.2 | Influenza | 228 | .3 |
| Total deaths | 10,194 | 13.9 | Measles | 13 | |
| Deaths under 1 year of age | 874 | [1] 66.0 | Puerperal sepsis | 8 | [1] 0.6 |
| Deaths from: | | | Scarlet fever | 9 | |
| Cancer | 928 | 1.3 | Tuberculosis (all forms) | 734 | 1.0 |
| Diarrhea and enteritis (under 2 years) | 170 | | Typhoid fever | 16 | |
| Diphtheria | 87 | | Whooping cough | 39 | |

[1] Per 1,000 live births.

## JAPAN

*Taiwan Island—Tainan Province—Cerebrospinal meningitis.*—Under date of March 29, 1939, an epidemic of cerebrospinal meningitis was reported in Tainan Province, Taiwan Island, Japan, with 227 cases and 88 deaths up to March 24, the number of reported cases having increased from 23 on February 28.

## YUGOSLAVIA

*Communicable diseases—4 weeks ended February 26, 1939.*—During the 4 weeks ended February 26, 1939, certain communicable diseases where reported in Yugoslavia as follows:

| | Cases | Deaths | | Cases | Deaths |
|---|---|---|---|---|---|
| Anthrax | 15 | 1 | Paratyphoid fever | 15 | 4 |
| Cerebrospinal meningitis | 99 | 24 | Poliomyelitis | 2 | 1 |
| Diphtheria and croup | 665 | 71 | Scarlet fever | 204 | |
| Dysentery | 18 | 3 | Sepsis | 6 | |
| Erysipelas | 167 | 4 | Tetanus | 15 | 6 |
| Favus | 7 | | Typhoid fever | 271 | 30 |
| Lethargic encephalitis | 5 | | Typhus fever | 38 | 1 |

## CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER

NOTE.—A table giving current information of the world prevalence of quarantinable diseases appeared in the PUBLIC HEALTH REPORTS for March 31, 1939, pages 547–559. A similar cumulative table will appear in future issues of the PUBLIC HEALTH REPORTS for the last Friday of each month.

### Cholera

*India—Chittagong.*—During the week ended March 18, 1939, 1 imported case of cholera with 1 death was reported in Chittagong, India.

*Siam—Smud Prakar Province.*—During the week ended March 25, 1939, 5 cases of cholera were reported in Smud Prakar Province, Siam.

### Plague

*Peru.*—During the month of February 1939, plague was reported in Peru as follows: Libertad Department, 4 cases, 2 deaths; Lima Department, 4 cases, 2 deaths; Piura Department, 1 case.

### Smallpox

*Japan—Taiwan—Tainan Province.*—According to information dated March 29, 1939, an outbreak of smallpox was reported in Tainan Province, Taiwan Island, Japan, with 47 cases and 7 deaths, the first cases occurring on March 16.

### Typhus Fever

*Sumatra—Medan.*—During the week ended February 25, 1939, 1 death from typhus fever was reported in Medan, Sumatra.

### Yellow Fever

*Brazil.*—Yellow fever has been reported in Brazil as follows: Espirito Santo State—Alegre, March 6, 1939, 1 death; Cafe, February 24, 1 death; Joao Pessoa, March 12, 1 death; Lambari, February 23, 1 death, March 5, 1 death; Muqui, February 23, 1 death, March 3–11, 2 deaths; Rio Pardo, February 26–March 3, 2 deaths; Sabino Pessoa, February 27–March 3, 2 deaths; Sao Felipe, March 7, 1 death. Minas Geraes State—Chale, February 27, 1 death; Laginha, February 27, 1 death.

×